Unmaking the Vertical Mosaic?

Occupational Class Attainment among Second-Generation Immigrants in Norway

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Abstract

One of the crucial questions on the long-term consequences of immigration is whether disadvantages experienced by immigrants are transferred to their children. In this study I present the first evidence on occupational class attainment among second-generation immigrants in Norway. I ask whether second-generation immigrants gain access to advantaged positions in the social structure on par with their native majority peers. The focus is on the four largest national ancestry groups of non-Western second-generation immigrants in the birth cohorts 1965-1980, i.e. individuals of Indian, Pakistani, Turkish, and Vietnamese backgrounds. Using binary and multinomial logistic regression, I explore the impact of educational qualifications and social origin upon access to employment and occupational attainment. The dataset is drawn from official registers administered by Statistics Norway, made available by the research project *Educational Careers: Attainment, Qualifications, and Transition to Work*. The dataset (N=91,225) comprises the entire population of second-generation immigrants in the selected birth cohorts and a ten percent random sample of native majority individuals from each birth cohort, used as a reference category in the analyses. The employment status and occupational class positions of the individuals are measured in 2005/2006, using the EGP class schema.

I report results from three sets of empirical analyses. All analyses were conducted separately for men and women. First, I find that all groups, except Norwegian-Pakistani and Norwegian-Turkish women, experience equal or higher levels of access to advantaged positions in the service class when compared to native majority peers with similar social origin. This corroborates findings in previous research on educational attainment, which have documented patterns of upward intergenerational social mobility for some national ancestry groups. Second, all second-generation groups, except Norwegian-Indian women, experience lower chances of being employed when compared to native majority individuals with similar educational qualifications and social origin. Lastly, once employment is secured, I find that all second-generation immigrant groups experience equal – and, in some cases, higher – chances of occupying advantaged occupational positions when compared to native majority individuals with similar educational qualifications and social origins.

Although some barriers remain with respect to access to gainful employment, overall, the process of occupational stratification works similarly for second-generation immigrants and the native majority. An important implication is that to the extent that ethnic stratification in Norway is reproduced between generations, this mainly happens within

the educational system and not in the labor market. Furthermore, the patterns documented are compared with studies of the labor-market position of second-generation immigrants in other Western European countries, found in a recent comparative volume using an analytical design that is emulated here. In this perspective, Norway is comparable to Sweden and Britain, which shows the smallest levels of ethnic labor-market disadvantage among the European countries included in that volume, i.e. second-generation immigrant groups of non-European ancestry primarily experience disadvantages with respect to unemployment.

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1
Introduction

The world is on the move, globalization entails migration. People who migrate often do so to improve their lot, although migration might be a hazardous undertaking. In Western societies, many migrants from developing countries join the lower echelons of the social structure upon their arrival in the receiving countries (e.g., Castles 1984; Reitz 1998; Castles and Miller 2003; van Tubergen, Maas and Flap 2004; van Tubergen 2006; Heath and Cheung 2007*b*). Thus, ethnic stratification changes the composition of the class structure in these societies into what Porter (1965) aptly described as a *vertical mosaic*, where ethnic minorities become clustered in less advantaged positions.

Since the late 1960s Norwegian society has experienced a substantial influx of labor migrants, asylum seekers, and political refugees from developing countries in Asia, Africa, and Latin-America (Brochmann 2003*a*; Tjelmeland 2003). Previous research has documented that immigrants from these regions to a disproportionate degree have joined the lower working class or been confined at the fringes of the labor market, receive higher levels of social security transfers than the native majority, and that minority-majority gaps in labor-market outcomes usually remain even after accounting for differences in educational qualifications (e.g., Berg 1992; Hayfron 1998; Hansen 2000; Barth and Raaum 2002; Longva and Raaum 2003; Barth, Bratsberg and Raaum 2004; Barth and Raaum 2004; Støren 2004; Djuve 2005; Støren 2005; Bratsberg, Raaum and Røed 2006; Wiborg 2006; Bratsberg, Raaum and Røed 2007; Brekke 2007*a*; Birkelund, Mastekaasa and Zorlu 2008; Brekke and Mastekaasa 2008). This new immigration has led to debates about whether a marginalized immigrant 'underclass' is in formation (e.g., Wikan 1995; Brochmann and Rogstad 1996; Brox 1997) and about the implications of immigration for societal cohesion

and the sustainability of the social-democratic welfare state model (e.g., Brochmann 2002; Brochmann, Borchgrevink and Rogstad 2002; Barth, Moene and Wallerstein 2003; Alesina and Glaeser 2004; Goodhart 2004; Brochmann and Hagelund 2005; Alesina and Giavazzi 2006).

On a more fundamental level these are questions of *social justice*, regarding whether the normative principles of meritocracy and equality of opportunity has been extended to these new ethnic minorities (Heath and Cheung 2007a). Ensuring that these principles are met has also been an explicit goal of government policy (see, e.g., St. meld. nr. 49 2003-2004). To better explore these questions empirically one can compare the experience of different *generations* of immigrants (Heath, Rothon and Kilpi 2008). The crucial question on the long-term consequences of immigration is to what degree the disadvantage experienced by immigrant parents is transferred to their children (often termed 'second-generation' immigrants).[1] The general question explored this study is: *Do second-generation immigrants gain access to advantaged positions in the social structure on par with their native majority peers?*

In this study I analyze the degree of occupational class attainment disadvantage – and, importantly, to preview my findings, advantage – among second-generation immigrants with so-called non-Western backgrounds.[2] Studies of occupational class attainment investigate the processes allocating individuals into different positions within the occupational class structure. I explore this in an intergenerational social mobility perspective, but I also investigate the role of educational qualifications in the process of gaining access to employment and subsequent occupational class attainment.

The purpose of the study is two-fold: First, the most important aim is to provide an empirical foundation by describing patterns of occupational class attainment among second-generation immigrant groups of different national ancestry relative to the native majority. Until now, this has not been done with Norwegian data. Second, if we observe differences between the second-generation immigrants and the native majority I try to ex-

[1] The term 'second-generation' immigrant is an oxymoron, and has been criticized for being imprecise and possibly stigmatizing. However, the term is used throughout this study, both because of its theoretical justification and its use in the international research literature. In the present study second-generation immigrants refers to those individuals who were born to two foreign-born parents in Norway and those born abroad to two-foreign born parents, but immigrated into Norway before the start of compulsory schooling. See Section 1.3, for further clarifications about second-generation immigrants, ethnicity, and national ancestry.

[2] A substantial part of previous research on the (second-generation) immigrant population in Norway is based the crude differentiation between non-Western and Western national ancestry. When relevant I refer to the non-Western category, used by Statistics Norway until 2008. It included all countries in Asia (including Turkey), Africa, Latin-America, and Oceania (excluding Australia and New Zealand), while all other ancestries were categorized as Western (see Høydahl 2008).

plain these by exploring the impact of ethnic minority status, social origin and educational qualifications. I differentiate between groups within the second-generation immigrant population based on individual national ancestries (i.e., country of origin), and focus on the early birth cohorts of second-generation immigrants with non-Western backgrounds. I include the four largest groups in the birth cohorts 1965-1980. These are individuals of Norwegian-Indian, Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese ancestry.[3]

What we want to know is whether and, if so, to what extent ethnic minority status overrides social origin and acquired educational qualifications in the process of occupational class attainment. Thus, the study explores the competing roles of ascription and achievement in the process of occupational stratification.

Occupational class destinations of second-generation immigrants are of key importance for both pessimists and optimists when assessing the incorporation of ethnic minorities into the receiving society (e.g., Heath and Cheung 2007*a*; Henriksen and Østby 2007). It is a goal of this study to contribute to more nuanced perspectives on labor-market incorporation among ethnic minorities in Norwegian society. So far, research on labor-market inclusion of ethnic minorities has predominantly focused on obstacles and disadvantages faced by these groups. Rogstad (2006) calls for a change of perspective, when he writes:

> "Instead of just focusing on those who do not get hired nor called in for interview, maybe one ought to start lifting forth those with minority background who have made a career. We know very little about those who actually succeed. What are the conditions for success and career, and what are the implications for those who experience it" (Rogstad 2006:34).[4]

A tendency to overlook success stories within immigrant communities in European countries has also been stressed by Thomson and Crul (2007). They argue that this is due to a general focus on sections of the population with identifiable social problems, but also a lack of differentiation between different ethnic groups within the immigrant population (Thomson and Crul 2007:1027).

Migration often propels social mobility and weakens the link between social origins and destinations, both across generations and between social positions held in countries of origin and destination (Heath et al. 2008). In the UK, for example, studies has shown that second-generation immigrants of Indian, Black Caribbean, and Irish background expe-

[3] See Section 1.5 for a presentation of these national ancestry groups.
[4] My translation. In Norwegian: "I stedet for bare å fokusere på dem som ikke får jobb og som ikke blir kalt inn til intervju, burde man kanskje heller begynne å løfte fram minoriteter som har gjort en karriere. Vi vet svært lite om hva som kjennetegner dem som faktisk lykkes. Hva er betingelsene for suksess og karriere, og hvilke implikasjoner har det for dem" (Rogstad 2006:34).

rience higher levels of upward social mobility compared to the native majority (Heath and McMahon 2005; Platt 2005*a*). In Norway, studies of educational attainment have documented similar tendencies among some groups of second-generation immigrants with Asian countries of origin (Fekjær 2006; 2007a). This confronts us with the question of whether the new ethnic 'disruption' (Brochmann 2003*b*) caused by immigration is challenging the explanatory power of social origin on individual life chances and social mobility. I explore the pertinent question posed by Gambetta (1987:2), that is, "how does it come about that many manage to escape the forces of social reproduction and the destinations that their ascribed status would predict."

1.1 Research questions, concepts, and analytic models

In its essence, social stratification research is the study of social power. It asks how and why "individuals are unequally located within a structure of social power" (Breen and Rottman 1995*b*:ix). The main distributive question is '*Who can get what?*' in a context of relative scarcity, where not everyone can get what they want or need (Lukes 1986:11).

In this study the focus is on *structural* assimilation among second-generation immigrants, which amounts to whether ascribed ethnic minority status is a factor that impacts the allocation of individuals to positions in the institutional structure of the receiving society (Porter 1965:72). The assimilation concept is contested and criticized, but it is important to note that neo-assimilation theory views assimilation processes as strictly multidimensional, domain-specific, relative to defined reference populations, and agnostic about the desirability of the specific outcomes (Alba and Nee 1997; Brubaker 2001). I follow Alba and Nee (1997:863) who define assimilation as "the decline, and at its endpoint the disappearance, of an ethnic/racial distinction and the cultural and social differences that express it". In this study structural assimilation is understood as parity in labor-market outcomes, i.e. in employment status and occupational class attainment between second-generation immigrants and the native majority. The labor market is the main arena where social power is distributed between citizens of a society (see, e.g., Breen and Rottman 1995*b*). Furthermore, labor-market participation is central for inclusion and participation in other spheres of society. In this perspective, parity in labor-market outcomes between the native majority and individuals in the immigrant population is desirable both on an individual-level and for society at large.

A central tradition in stratification research focus on the concept of *equality of opportunity*, it aims at testing and exploring whether or to what degree the normative prin-

ciple that any individual's social attainment and possibility of getting ahead is (un-)related to ascribed characteristics (e.g., Breen and Jonsson 2005). A regular way of conceptualizing the process of social stratification is to focus on the linkages between an individual's social origin, educational attainment, and social destination in adult life (e.g., Erikson and Goldthorpe 1992; Erikson and Jonsson 1996; Breen 2004c; Heath and Cheung 2007*a*).

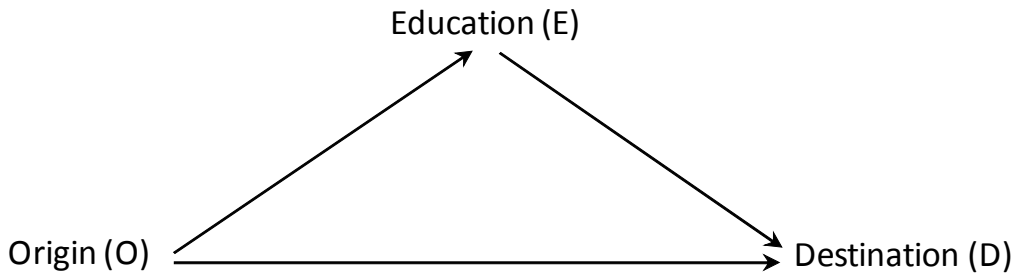


Figure 1.1: *The Origin–Education–Destination triangle.*

In this study, destinations are measured as the occupational positions occupied in adult life. Figure 1.1 presents the Origin–Education–Destination (OED) triangle, a simplified extension of Blau and Duncan's (1967) seminal 'basic model of the process of stratification'. Here, the question is to what degree social positions are transmitted from parents and to their children. This can happen indirectly, mediated by educational attainment (i.e., O–E), or directly, through other forms of family resources and direct inheritance (i.e., O–D). The linkage between educational qualifications and occupational class destinations (i.e., E–D) is particularly important, since educational attainment is considered the prime channel of social mobility in advanced modern societies, and thus central to the life-chances of individuals (e.g., Ishida, Müller and Rigde 1995).

Most developed modern societies are to lesser or higher degrees closed by social class barriers (Breen and Rottman 1995*b*). However, societies can also be closed along other dimensions than those of social class, such as ethnicity or race (e.g., Duncan 1968; Wilson 1978; Hout 1984). We can expand the OED triangle by adding ethnic minority status (M) as an ascribed status, alongside social origin. Figure 1.2 shows the expanded OMED model (adapted from Kalter, Granato and Kristen 2007:215). We see that differential access to advantaged occupational class positions between the native majority and second-generation immigrants could indirectly be caused by lower educational attainment levels relative to the native majority (i.e., M–E) and directly by lower occupational returns to their educational qualifications (i.e., M–D). Furthermore, the educational attainment and subsequent occupational class attainment may be depressed by between-group differ-

ences in social origin compared to the native majority (i.e., M–O). The dotted M–O-link points to the fact that there often is an endogenous relationship between an individual's ethnic minority status and his or her social origin, i.e. parent's position in the social structure.

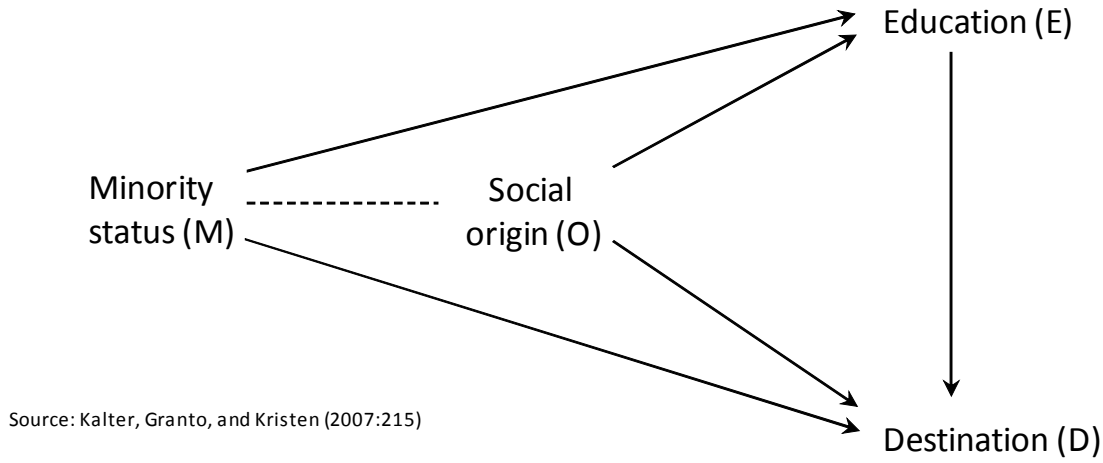


Figure 1.2: *The expanded OMED model.*

The word *equality* is far from unambiguous and may denote different things, such as mathematical equality, equality of outcome, and formal equality (Hernes 1974). In particular, the relation between equality of opportunity and equality of outcomes is problematic (Coleman 1968).

In studies of intergenerational social mobility we are primarily interested in mobility between *generations* (i.e., the overall Origin–Destination relationship). One explores the relationship between the position an individual occupy in adult life and the position of the family he or she grew up in (Breen 2004*a*). However, the problem is that of finding a reasonable *yardstick* on how weak the strength of association between origin and destination should be for it to be meaningful to talk about equality of opportunity. Deciding upon such a yardstick is both an empirically problematic and a normatively contested issue (e.g., Rawls 1971; Goldthorpe 1996; Marshall, Swift and Roberts 1997; Swift 2004; Breen and Jonsson 2005; Jencks and Tach 2006). Since we strictly speaking measure inequalities of *outcome* – and, there are inherent troubles in measurement and assessment of differences in preferences (and genetically inherited traits, see Freese 2008) between individuals – we should be cautious not to conflate inequality of opportunity with inequality in outcome (e.g., Swift 2004; Breen and Jonsson 2005).[5] A common argument – which *may* be particu-

[5] A general problem of measures of inequality of opportunity based on measures outcomes is that the 'chances' they refer are computed *ex post*, that is, after the fact (Breen 2004d). This makes such interpretations and inferences problematic, since data on inequality of outcomes do not reflect inequality of opportunity *per se* (Breen and Jonsson 2005). Inequality of opportunity is most probably part of the pic-

larly important when studying differences across ethnic minorities – is that differences in outcomes "reflect differences in preferences, rather than in resources to overcome constraints ...." (Breen 2004d:20). Furthermore, *if* between-group differences in outcome systematically correlate with different educational and occupational aspirations it is important to ask whether they result from adaptive preference-formation due to illegitimate life conditions (e.g., Elster 1983) or is due to a legitimate plurality of values and conceptions of the 'good life' (e.g., Føllesdal 1999). Too what extent should we treat between-group differences in cultural orientations and goals as independent of societal position and context? The possible presence of preference *heterogeneity* related to unequal life conditions confronts us with both challenges in explaining empirical trends as well as normative questions of assessing these empirical findings.

However, descriptive evidence on different levels of intergenerational social mobility between second-generation immigrants and the native majority tells us whether the patterns of ethnic stratification experienced by immigrant parents are transferred to their children. For any scientific enterprise it is important to establish the phenomenon you want to explain, i.e. document its empirical existence and describe it (e.g., Merton 1987; Goldthorpe 2001). My first research question explores a *crude* measure of differences in (upward) intergenerational social mobility between second-generation immigrants and the native majority:

1. *Do second-generation immigrants experience different levels of access to advantaged occupational class positions (i.e., within the service class) compared to native majority individuals of similar social origin?*

Furthermore, I scrutinize the impact of educational qualifications in the process of occupational class attainment. The term *meritocracy* was introduced by Young (1958) to describe a society where life chances and allocation of individuals to different positions in the occupational structure is only dependent on talent and achievement.[6] In this study I understand the concept of meritocracy as a system where occupational class attainment depends on achieved criteria, such as educational qualifications and competence, and is unrelated to ascribed characteristics, such as ethnic minority status and social origin (Heath and

ture when we observe inequalities of outcome, but the outcomes may be the result of other things as well.

[6] In the science-fiction satire *The Rise of Meritocracy*, Young (1958) described a future society where one's positions in the social structure were only dependent on merit, which he described as the sum of IQ and effort.

Cheung 2007a:4). The two next research questions explore whether second-generation immigrants experience equality of opportunity in access to employment and occupational class positions, when compared to native majority individuals with similar educational qualifications and social origins. Occupational attainment is thus explored as the outcome of a two-step process, where individuals first have to gain access to employment and then access to specific occupational positions.

2. *Do second-generation immigrants experience equal access to employment relative to native majority peers with similar educational qualifications and social origins?*

3. *If employed, do second-generation immigrants experience equal access to different occupational class positions relative to native majority peers with similar educational qualifications and social origins?*

In all analyses I explore not only differences in outcome between the second-generation immigrants and the native majority, but also differences between the four second-generation national ancestry groups.

Finally, the present study is based on the view that "[t]he main task of the social sciences is to explain social phenomena" (Elster 2007:9).[7] To answer the three research questions, I report results from three different sets of statistical analyses, each corresponding to a specific question. If differentials between the native majority and the four national ancestry groups do exist, I try to explain these. In the concluding chapter, I discuss the empirical results in light of the research questions posed, and the theoretical framework and previous research presented in Chapter 2.

The dependent variables are the individuals' employment status and occupational class position, as measured in 2005/2006. I use the so-called Erikson-Goldthorpe-Portocarero (EGP) class schema to operationalise the social class structure. The EGP class schema is developed by the English sociologist John Goldthorpe and colleagues (e.g., Erikson, Goldthorpe and Portocarero 1979; Erikson and Goldthorpe 1992; Goldthorpe 2007). All results are reported separately by gender. I utilize comprehensive population-wide matched individual-level data from different administrative registers, administered by

[7] Of course this is not the only task of the social sciences "but it is the most important one, to which others are subordinated or on which they depend" (Elster 2007:9). In order to, for example, give effective policy advice, normative evaluation, or to inform sociopolitical dissent, to mention a few other possible tasks, it is important that these are informed by valid explanations of the social phenomena at hand (Boudon 2002; Hedström 2005; Svallfors 2005).

Statistics Norway. The data was made available by the research project *Educational Careers: Attainment, Qualifications, and Transition to Work*. The total sample (N=91,225) covers all second-generation immigrant individuals in the birth cohorts 1965-1980 for the national ancestry groups in focus and a ten per cent reference group for each cohort in the native majority.[8]

This study has two main innovations in the Norwegian context: First, the tracking of intergenerational social mobility of second-generation immigrants into the labor market is novel. Second, the focus on occupational class destinations and the joint investigation of the role of social origins and educational qualifications for labor market-outcomes of second-generation immigrants is new. Furthermore, the set of analyses relating to the second and third research question emulates the research strategy uses in the first comparative study of labor-market outcomes among second-generation immigrants in Western European countries (see Heath and Cheung 2007*b*).[9] This enables me to situate the Norwegian results within a comparative perspective.

1.2 Mechanism-based explanations

The present study gives primacy to mechanism-based explanations of social phenomena, which implies a commitment to make observed social regularities intelligible by specifying in detail how and *why* they were brought about (Hedström and Bearman 2009*b*). This perspective has recently been advocated under the label *analytical sociology* (e.g., Hedström and Swedberg 1998*a*; Hedström 2005; Hedström and Bearman 2009*a*). The core of this explanatory strategy has been expressed by Elster (1989:3-4):

> "To explain an event is to give an account of why it happened. Usually... this takes the form of citing an earlier event as the cause of the event we want to explain .... [But] to cite the cause is not enough: the causal mechanism must also be provided, or at least suggested."

I follow Hedström (2005:25), who define social mechanisms "as constellation[s] of entities and activities that are organized such that they regularly bring about a particular type of outcome." In sociology, these entities usually are individuals, since social phenomena *ultimately* are the product of the actions of individuals. That is, without the actions of human beings social life would stop, in this sense only individuals have causal efficacy. The mechanism perspective is therefore grounded in the doctrine of methodological individualism.

[8] The number of individuals in the different national ancestry group samples are given in brackets, these are Norwegian-Indian (N=446), Norwegian-Pakistani (N=2,490), Norwegian-Turkish (N=581), and Norwegian-Vietnamese (N=763).

[9] The sample delimitation, operational definition of variables, and statistical models are as far as possible identical to those reported in Heath and Cheung (2007*b*).

However, this focus does not ignore the existence of social relations and structure. Instead, intentional actors are seen as embedded in different social contexts which have impact on the choices and opportunities open to them (Granovetter 1985). However, in the end social structures and relations are also the outcome of previous actions of individuals. This 'weak'-position of methodological individualism has been labeled as structural individualism (Udehn 2001).

As a strategy of explanation the mechanism-based perspective differs from a focus on mere *statistical associations* by trying to pin-point the generative mechanisms behind these relationships. From this perspective an important implication is underlined, that is, that statistical analyzes are tests of explanations, but they are not explanations by themselves (Hedström 2005:23). A black-box explanation describes an observed regularity between event A and B, but does not provide the causal mechanism(s) linking A to B. The crucial point in a focus on action-based mechanism-explanations is that they provide causal depth by explicating the micro-foundations for the macro-social phenomena under study (e.g., Schelling 1978; Coleman 1986). Our focus is on the explanation of social phenomena at the system-level (macro), but analyses of system-level outcomes should focus on actions and orientations of the lower-lower level units (micro), ideally individual actors (Coleman 1990:2-3).[10] In a stylized manner, Coleman's (e.g., 1986; 1987; 1990) macro-micro-macro model provides this ideal (see Figure 1.3).[11]

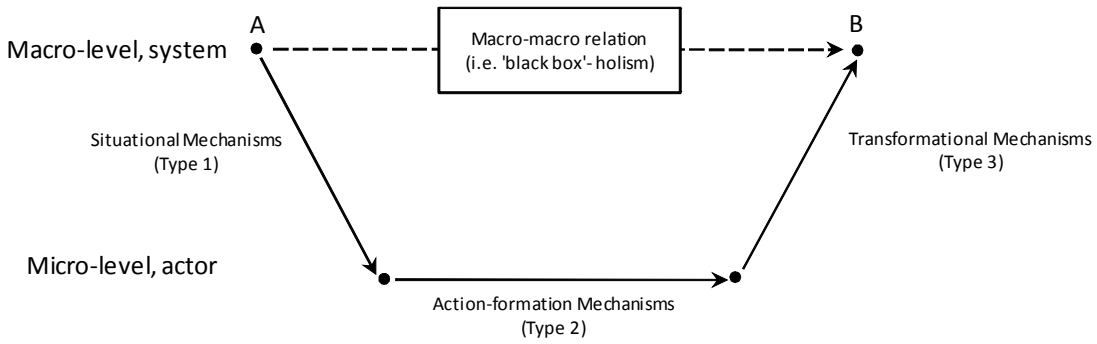


Figure 1.3: *Coleman's macro-micro-macro model.*

[10] Coleman (1990:5) advocated what he called a *pragmatic* methodological individualism, where "there is no implication that for a given purpose an explanation must be taken all the way to the individual level to be satisfactory …. [t]he explanation is satisfactory if it is useful for the particular kinds of intervention for which it is intended."

[11] Figure 1.3 also shows the typology over different mechanisms proposed by Hedström and Swedberg (1998b:21-23). Situational mechanisms (Type 1) are thought of macro-level events or conditions that impact individual actors, action-formation mechanisms (Type 2) specify how these (opportunity) conditions shape and become transformed to individual actions, and, finally, transformational mechanisms (Type 3) specify how specific macro-level events or conditions are the aggregate outcome of the sum of actions and interactions between individual actors.

In this study I explore the allocation of second-generation immigrants into different positions in the Norwegian occupational class structure, compared to the native majority (macro-level outcome B). In the first analysis, I explore whether there are differential statistical associations in access to advantaged occupational class positions between second-generation-immigrants and native majority individuals of similar social origin ('macro-macro' relation, A→B). This serves as a crude and descriptive measure of intergenerational social mobility among second-generation immigrants and the native majority, by establishing a 'black-box' relationship between the social positions of parents and children. In the two last analyses I focus on the role of educational attainment as an individual-level mechanism facilitating intergenerational social mobility among second-generation immigrants. Furthermore, I explore the possible effect of other mechanisms besides educational attainment that could cause second-generation immigrants to receive different labor-market returns to their educational qualifications than native majority individuals (e.g., employment discrimination, different access to job-relevant social networks, and direct social origin effects).

1.3 Ethnicity, national ancestry, and second-generation immigrants

Ethnicity is a relational concept.[12] On the one hand, in-group affinities rest on shared socially constructed self-conceptions among members of the specific groups concerned. Weber's (1978) definition of ethnicity and ethnic groups is a clear statement of this understanding:

> "[W]e shall call 'ethnic groups' those human groups that entertain a subjective belief in their common descent because of similarities of physical types or of customs or both, or because of memories of colonization and migration; this belief must be important for the propagation of group formation; conversely it does not matter whether or not an objective blood relationship exists" (Weber 1978:389).

On the other hand, the boundaries of ethnic groups and identities do not only depend on members of the in-group, but is a result of the actions of and interactions with other ethnic groups. In a different approach to ethnicity, Barth (1966:15) focused on processes of boundary maintenance, and argued that it is "the ethnic boundary that defines the group, not the cultural stuff that it encloses." Over time, especially between generations, these boundaries may shift and along with them the ethnic groups and identities that they entail.

[12] Ethnicity is a concept that in many ways is poignantly captured by the Thomas theorem, i.e. that "if men define situations as real, they are real in their consequences" (Thomas and Thomas 1928:572).

Hence, ethnic groups are not static and homogeneous social formations, but vary across time and place (Heath and Cheung 2007*a*). Using Alba's (2005) evocative phrase, we know that some ethnic group boundaries stay bright, while others over time become increasingly blurred. This makes it important to distinguish between ethnic 'groups' as categories, as real social entities, and 'groupness', i.e. the relative level of group formation, as a conceptual variable (Brubaker 2002).

In this study I differentiate between groups in the second-generation immigrant population based on their objective national ancestry, that is, the country in which their parents were born. This works as a proxy measure of ethnicity.[13] Thus, the present study does not investigate the impact of ethnicity as such, but explores differences between nominal group categories based in national ancestry. Furthermore, the relationship between ancestry and ethnicity is complicated, in many cases these categories do not correspond (e.g., Brubaker 2002). The populations in many of the source countries in this study make up complex amalgams of ethnic groups.[14] Still, it is an important assumption in this study that individuals of the same national ancestry share important unmeasured characteristics; however, these cannot necessarily be equated to a common ethnicity. Furthermore, all ethnic minority individuals in focus here share a visible minority status in a native majority context, where they might be singled out by such features as foreign-sounding names and phenotypic appearance (e.g., Rogstad 2000).

Finally, the second-generation immigrant category and its definition in the current study need clarification. I include all individuals born in Norway by two foreign-born parents and, in addition, all individuals who were born abroad by two foreign-born parents, but immigrated before or at the age of start of compulsory schooling (for our birth cohorts this means the age of seven).[15] This definition is theoretically informed: Individuals born abroad, but arriving before the start of compulsory schooling will have all their educational qualifications from domestic institutions, comparable to native majority individuals. Furthermore, they will have received their secondary socialization in Norway and are likely to be fluent in Norwegian language (Heath and Cheung 2007a:39). This gives strong theo-

[13] Two other proxies are common, i.e. self-reported measures of ethnicity and nationality of resident citizens. For an insightful discussion of possible pitfalls, see Heath and Cheung (2007*a*:34-40).

[14] The Kurdish minority in Turkey is one case, while individuals of Indian ancestry are another. Geographically India makes up an entire subcontinent and is one of the most ethnically diverse societies in the world, with hundreds of different linguistic and religious groups. To treat these as members of one ethnic group is clearly a gross over-simplification.

[15] The distinction made at the start of compulsory schooling is also made in previous research (e.g., Bakken and Sletten 2000; van Ours and Veenman 2003; van Ours and Veenman 2004; Fekjær 2006; Heath and Cheung 2007b).

retical reasons to expect that their labor-market outcomes are more comparable to the native majority, than to their immigrant parents.

1.4 Recent immigration into Norway

Like many other European countries, Norway until the end of the 1960s experienced net emigration (Castles and Miller 2003; Tjelmeland 2003). However, since then Norway has experienced net immigration, with a substantial influx of migrants from developing countries in Asia, Africa, and Latin-America. Over the course of a few decades, Norway has become an increasingly diverse and ethnically heterogeneous society.

Alongside other Western European countries, Norway at the end of the 1960s experienced profound economic growth, with corollary labor shortage and need for mobile employment (Tjelmeland 2003:67). Hence, Norway opened it borders for economic immigration. Subsequently, a heterogeneous group of labor migrants, predominantly consisting of young men, arrived from India, Pakistan, Turkey, and Morocco. Most of them were hired in unskilled blue-collar positions within the industry and service sector (especially within hotels and restaurants) (Brochmann 2003a:137; Tjelmeland 2003:105,127). But in the wake of the 1973 oil crisis and the following economic recession a decision was made in Norway to follow the trend in other European countries, by temporarily halting the inflow of foreign migrant labor.

On February 1, 1975 a moratorium on immigration was introduced. The argument of the government and central political actors was that this restriction would both enable more regulation on immigration into Norway and help improve the standard of living of the foreign workers that already had arrived. This formally ended large-scale labor immigration of unskilled workers from non-Western countries into Norway (Brochmann 2003a:161). The temporary restriction introduced in 1975 was renewed for several years, and in 1981 it was adopted as a permanent measure. In 1988 a new immigration law based on the *ad-hoc* principles was adopted and, later, implemented in 1991 (Brochmann 2003*a*). Thus, the moratorium introduced in 1975 ended as guiding the central lines in Norwegian immigration policy, still in place today. This immigration policy is based on three main principles allowing immigration: the demand for specific skilled labor, family reunification, and political asylum.

After the introduction of the moratorium in 1975, many of the migrant workers were reluctant to return to their origin countries, being afraid they would be refused reentry. A second phase, consisting in family reunifications then started. One option made

available by a waiver in the new regulations, which many opted for, was to settle down in Norway permanently and apply for family reunification with relatives from their origin country. This led to a change in the immigration inflow to Norway and a stabilization of the immigrant population, with a demographic change from single, male workers to more diversified groups made up of family members and spouses (Brochmann 2003a:142-144). At the end of the 1970s a third phase started, when the first refugees and asylum seekers arrived. The first political refugees and asylum seekers arrived from Vietnam, Chile, and other countries in Latin America (Brochmann 2003a:161). The inflow of family reunifications, political refugees, and asylum seekers has continued since, although with changing intensities and with people arriving from different countries of origin.

1.5 National ancestry groups in this study

As of January 1, 2009, immigrants made up 10.6 per cent of the population in Norway, where 47.0 per cent had background from countries in Asia, Africa, and Latin-America.[16] In this study I focus on the second-generation descendants of the four largest early arriving groups of immigrants in Norway with background from countries in these regions. These are second-generation immigrants of Norwegian-Indian, Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese national ancestry. Figure 1.4 shows the registered population growth of all persons with immigrant background from India, Pakistan, Turkey, and Vietnam in the period 1970-2009. As of January 1, 2009 the Pakistani immigrant population was the second largest in Norway, following the Polish immigrant population. The Vietnamese population was the seventh largest, the Turkish population was the eleventh largest, and the Indian population was the eighteenth largest group.

As of January 1, 2006 the Norwegian-Pakistani, Norwegian-Vietnamese, and Norwegian-Turkish second-generation immigrant groups were the three largest within the total population of Norwegian-born persons with two foreign-born parents, while the Norwegian-Indian group was the ninth largest (see Table 1.1).[17] At the same time, Norwegian-born persons with two foreign-born parents made up 68,182 individuals, approximately 1.5 per cent of the total population in Norway. Roughly 6 out 10 of these individuals had parents born in Asian countries (Henriksen 2007). The four second-generation immigrant

[16] Statistics Norway's statistical database 'Statbank Norway' is the source of the population statistics presented in this section. Note that Statistics Norway define the immigrant population as all persons born in Norway or abroad by foreign-born parents. (See http://statbank.ssb.no//statistikkbanken/ for details [Retrieved: September 10, 2009].)

[17] Note that the definition of second-generation immigrants used by Statistics Norway is stricter than the one I employ in the current study.

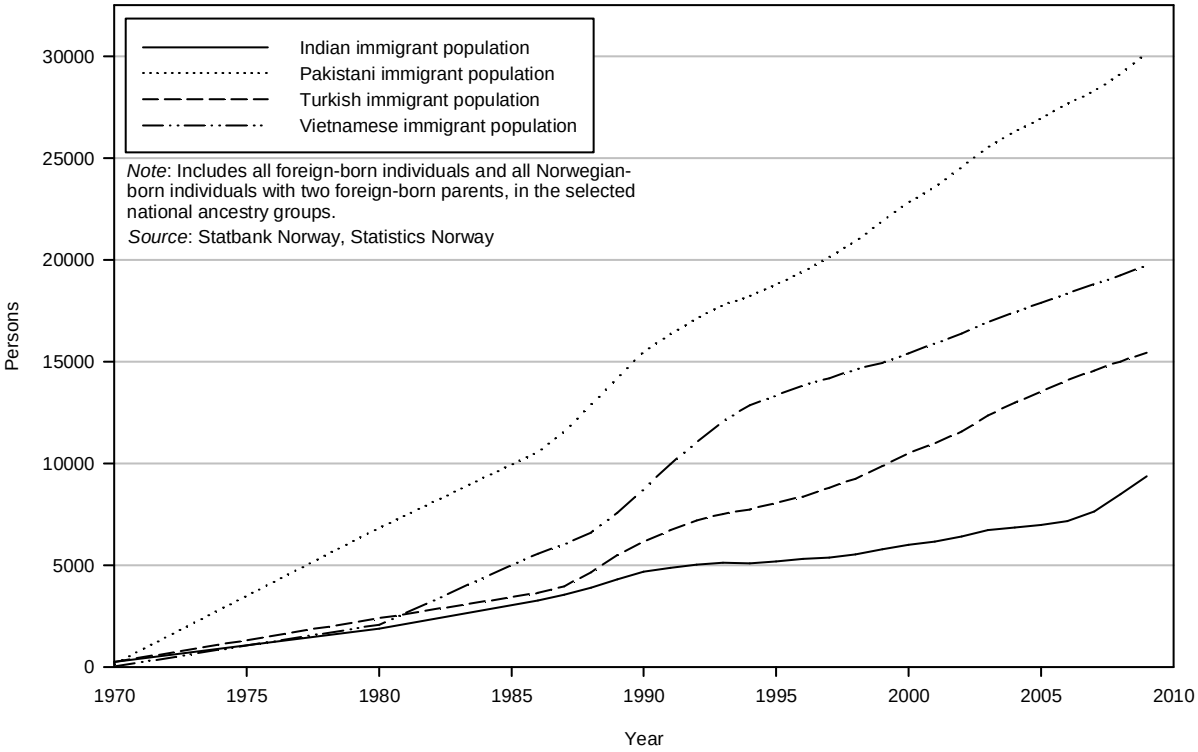


***Figure 1.4**: Selected groups in the Norwegian immigrant population (1970-2009).*

***Table 1.1:** Persons born in Norway with two foreign-born parents by national ancestry (January 1, 2006).*

	Country	Persons	%		Country	Persons	%
1	Pakistan	12,193	17.9	10	Iran	2,214	3.2
2	Vietnam	6,088	8.9	11	Bosnia-Hercegovina	2,104	3.1
3	Turkey	4,747	7.0	12	Denmark	1,400	2.1
4	Sri Lanka	4,456	6.5	13	Chile	1,388	2.0
5	Somalia	4,303	6.3	14	Sweden	1,017	1.5
6	Iraq	3,582	5.3	15	Phillipines	1,005	1.5
7	Serbia and Montenegro	2,863	4.2		Other countries	15,780	23.1
8	Morocco	2,613	3.8				
9	India	2,432	3.6		*Total*	*68,185*	*100.0*

Source: Henriksen (2007:215)

groups in focus here constituted 37.6 per cent of the total second-generation immigrant population in 2006. Furthermore, in the selected birth cohorts (1965-1980), Norwegian-Indian, Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese second-generation immigrants constituted the four largest second-generation immigrant groups with background from so-called non-Western countries. The age profile of the second-generation immigrant population is skewed compared to the total population. In 2006 only 14 percent of the individuals in the second-generation immigrant population were above 20 years (Henriksen 2007). Below, I briefly present background information on the selected national ancestry groups.

Norwegian-Pakistani second-generation immigrants are descendants of early arriving labor migrants and their relatives, arriving through the family reunification programs. This group was one of the first non-Western immigrant groups to arrive in Norway. Before 1975, most of the Pakistani immigrants were young men from the Punjabi province, a north-eastern province dominated by agriculture and industry. After 1975, the prime entry channel was for relatives of these young men to arrive through family reunification programs. Some of the Pakistani immigrants were relatively well off in Pakistan, with higher levels of education than the average level in the rest of the population. However, upon arrival in Norway most took up unskilled manual jobs (Tjelmeland 2003:129-130). The Pakistani immigrant groups is also overrepresented as self-employed when compared to other immigrant groups (Henriksen 2007).

Most of the Norwegian-Turkish second-generation immigrants in this study are descendents of labor migrants arriving in the 1970s and their family reunified relatives. However, after 1980 some Turkish immigrants arrived as political refugees, most of whom were Kurds. Most of the Turkish labor migrants had low levels of higher education, but still had more education than the average levels in the Turkey. The jobs they took up in Norway was mostly unskilled (Tjelmeland 2003:130).

The Indian immigrant population in Norway is relatively small compared to the other groups in this study. However, the group was among the earliest to migrate to Norway, hence, Norwegian-Indian second-generation immigrants are well represented within the birth cohorts in focus. They came to Norway from the Punjabi region of India, close to the border of Pakistan, looking for work. On average, they had higher levels of education and were able to secure more high-level jobs than the Pakistani immigrant group, but they too experienced a decline in social standing upon their arrival (Tjelmeland 2003:130).

Vietnamese immigrants differ from the other groups in this study, since they predominantly arrived as political refugees. Some came as boat refugees after the American withdrawal from South Vietnam in 1975, while others fled after the unification of South and North Vietnam in 1976. Most of these Vietnamese refugees arrived in Norway between 1978 and 1982 (Brochmann 2003a:172). Because of the late arrival of the Vietnamese immigrants many of the 'second-generation' immigrants we focus on in this study were actually born abroad.

1.6 Outline of study

The current study is organized into eight chapters. Chapter 2 starts by providing a brief review of previous research on educational attainment and labor-market outcomes among second-generation immigrants in Norway. I also point out the contributions to new knowledge in the current study. Furthermore, the chapter presents the rationale behind the EGP class schema, used to designate positions within the occupational class structure. Lastly, it presents the theoretical framework for the empirical analyses. I present theoretical perspectives on impact of social origin and educational qualifications for occupational class attainment among second-generation immigrants.

In Chapter 3, I present the sample and dataset, the measurement of the variables, and the statistical methods employed in the empirical analyses. In Chapter 4, I present descriptive statistics on the particularities of the sample utilized in the subsequent analyses. These descriptive results show the actual occupational destination distribution among the second-generation immigrant national ancestry groups in focus. In Chapter 5, I report results on whether second-generation immigrants experience equal access to advantaged occupational class positions (i.e., the service class) compared to individuals in the native majority with similar social origins. In Chapter 6, I explore whether second-generation immigrants gain access to employment on par with native majority individuals with similar educational qualifications and social origins. In Chapter 7, I focus exclusively on individuals in gainful employment, exploring whether second-generation immigrants gain access to advantaged occupational positions on par with native majority individuals with similar educational qualifications and social origins.

In Chapter 8, I summarize the main findings and discuss them in light of previous research and the theoretical framework. I also discuss implications of this research for future research and policy. In conclusion, I discuss whether the evidence presented on occupational class attainment among of second-generation immigrants in Norway points to

patterns of continuing ethnic stratification or whether processes of social mobility, unmaking the vertical mosaic, is in the pipeline.

2
Theory and previous research

In this chapter I present the theoretical framework used to study occupational class attainment among second-generation immigrants in the empirical analyses, and I position this study in relation to previous research in Norway.

I start by giving a brief review of relevant previous research on second-generation immigrants in Norway and point to contributions to new knowledge in this study. Second, I present the rationale of the EGP class schema. Third, I discuss measures of social fluidity and relative mobility used to explore intergenerational mobility among second-generation immigrants. Fourth, I discuss the role of educational qualifications and other potentially important mechanisms in the process of occupational stratification of second-generation immigrants. I end by summarizing empirical expectations from the theoretical perspectives.

2.1 Previous research on second-generation immigrants in Norway

In this section I provide a review of the relevant literature in order to establish what is already known about educational attainment and labor-market outcomes among second-generation immigrants in Norway.

I start by summarizing research on educational attainment since this is a central mediating factor in the process of intergenerational social mobility and occupational class attainment. Then, I present relevant research on labor-market outcomes among second-generation immigrants in Norway. Since the great majority of second-generation immigrants in Norway still are found within the educational system the amount of research on their labor-market outcomes is relatively limited.

Educational attainment

On average, second-generation immigrants of non-Western backgrounds in Norway grow up in families with less educated parents and lower levels of household income (e.g., Østby 2004; Henriksen 2007). Social origin is a central determinant of educational success (see Erikson and Jonsson 1996; Breen and Jonsson 2005). A recurrent finding in international studies is that the majority of gaps in educational achievement and attainment between the native majority and second-generation immigrants is explained by differences in social origin (for recent reviews, see Heath and Brinbaum 2007; Heath et al. 2008). In Norway, previous research has found a higher push towards school among youths with non-Western immigrant background in primary and secondary school (e.g., Helland 1997; Krange and Bakken 1998; Lauglo 1999; Bakken and Sletten 2000; Lauglo 2000; Bakken 2003; Fekjær and Leirvik in press). This push is expressed through higher focus on homework, positivism toward the school, higher aspirations, and, in some instances, better achievement when social background is taken account of. An important question is whether this push result in higher attainment levels or whether the high aspirations are blocked by lack of resources and equal opportunities.

Previous research has shown that non-Western second-generation immigrants, on the whole, have slightly lower probabilities of completing upper secondary education (Fekjær 2006:72-73). However, Fekjær and Birkelund (2007) found little evidence of a negative effect of ethnic composition on the educational achievement and attainment levels of minority pupils in secondary schools in Oslo. But they found a strong negative effect on achievement and attainment from attending secondary schools where the average parental educational level was low. Furthermore, Fekjær (2006) documented a polarized pattern of educational attainment within the non-Western second-generation population. On the one hand, relatively high proportions only complete compulsory primary education or drop out during secondary education. However, the drop-out overrepresentation largely disappears when between-group differences in social origin are taken account of, and is mainly explained by lower educational achievement (Brekke and Fekjær 2008; Grindland 2009). On the other hand, if second-generation immigrants complete upper secondary education, a substantial proportion continues into higher education and attains educational qualifications at the MA-degree level. Non-Western second-generation immigrants do not have higher drop-out rates than native majority students within higher education (Reisel and Brekke 2009).

Over the last decades there has been a substantial increase in the absolute number of students in higher education in Norway (Grøgaard and Aamodt 2006). This not only included the native majority, the period was also marked by the entrance of second-generation immigrants into the Norwegian system of higher education (Henriksen 2006). An early study found that non-Western second-generation immigrants had lower participation rates in higher education compared to the native majority, but the gap disappeared when social origin was held constant (Dæhlen 2001). As of October 1, 2005, a higher proportion of second-generation immigrants (32.4 percent) between 19 and 25 years was enrolled in higher education compared to the same age group in the native majority (approx. 31 percent, see Henriksen 2006:61-62). Extending this research, Fekjær (2006; 2007*a*) has examined higher-level educational attainment of second-generation immigrants in Norway. Overall, second-generation immigrants do undertake less education than the native majority population. However, exploration of differences across social origin, national ancestry and gender reveals a more complex picture. Gender differences within the second generation are marked; on the whole, minority women are more prone to finish upper secondary education and lower-level higher education (i.e. BA-level) than second-generation male students. However, if we look at the probability of completing higher education at the MA-level, these gender differences are leveled out (Fekjær 2006:76). Turning to differences between national ancestry groups, Fekjær found that the Norwegian-Chinese, Norwegian-Indian, Norwegian-Iranian, and Norwegian-Vietnamese groups have higher levels of educational attainment compared to the native majority. Individuals of Norwegian-Pakistani ancestry have similar probabilities of completing upper-level higher education, once social origin is taken into account (Fekjær 2006:82). Second-generation immigrants of Norwegian-Chilean, Norwegian-Moroccan, and Norwegian-Turkish ancestry have lower probabilities of attaining higher education, even after taking account of social origin. Although important, Fekjær (2007*a*:382) argues that social origin (measured as parents' education and income) only explain parts of the gap in educational attainment between second-generation immigrants and the native majority population. Furthermore, a central conclusion is that differences between national ancestry groups are more important than minority background in general (Fekjær 2006:86).

The educational profiles of second-generation immigrants do not only differ from the native majority vertically in term of attainment levels, but also horizontally in term of selection to different educational fields. Second-generation immigrants are more prone than the native majority to choose higher education in administration and business, tech-

nical-engineering and health oriented educations, and natural sciences subjects (e.g., Dæhlen 2001; Opheim and Støren 2001; Henriksen 2006; Daugstad 2007; Schou 2009). Horizontal between-group differences in the *types* of education that the candidates graduate from could have implications for labor-market outcomes, insofar that the candidates are qualified for work within different segments of the labor market (e.g., Kalmijn and Lippe 1997). However, in this study I only focus on the impact of vertical between-group differences in educational attainment *level* upon occupational class attainment, due to the relative small sample size in some of the second-generation national ancestry groups.

Labor-market outcomes

Due to their relative youth, the labor-market outcomes among second-generation immigrants are not very well mapped. Only a limited number of studies have followed the early cohorts of second-generation immigrants of non-Western backgrounds in the transition from education to work. There are, however, theoretical reasons to expect that second-generation immigrants experience smaller disadvantages in labor-market outcomes compared to immigrants, since they have received schooling and credentials from domestic educational institutions similar to native majority individuals and are fluent in the majority language (Heath and Cheung 2007*a*). These assumptions are supported by comparative research on labor market outcomes among ethnic minorities in industrialized countries (e.g., Heath and Cheung 2007*b*).

In Norway, second-generation immigrants experience significantly higher employment rates than the immigrant population as a whole, but the level is still lower than in the native majority population (e.g., Daugstad 2007; Henriksen and Østby 2007). Measuring inclusion by three criteria (being employed, enrolled in higher education, or a combination of the two), Olsen (2006; 2008) finds only small gaps between the second-generation immigrants and the native majority. Olsen (2008) argues that those discrepancies found is driven by female second-generation immigrants, and that they can be explained by between-group differences in family adaptations. Hence, Olsen argues that the labor market status of second-generation immigrants is comparable to the native majority, and that this population is not marginalized.

In a study of employment and earnings among individuals with vocational upper-secondary education, Brekke (2007*b*) found that second-generation immigrants of non-Western background experienced an earnings disadvantage relative to native majority individuals. However, this gap closed with time since graduation. Brekke found only minor

earnings differentials, when comparing individuals in full-time employment. Drange (2009) found that highly educated non-Western second-generation women had significantly lower probabilities of securing full-time employment relative to native majority women. Focusing on university colleges graduates in the period 1993-2005, Evensen (2009) found that non-Western second-generation immigrants experienced lower probabilities of securing paid employment during the first year after graduation compared to the native majority. However, among candidates graduating in Oslo no employment gaps were found. Furthermore, he found small differences in annual income between minority and majority candidates. However, in some sectors second-generation immigrants experience negative income gaps (Evensen 2008). In the first study of labor-market outcomes that distinguish between different second-generation national ancestry groups, Brekke and Mastekaasa (2009) found that some groups experienced small disadvantages income relative to educational qualifications. However, the gaps are often non-significant and diminish with time throughout the career.

Other relevant studies analyze the labor market outcomes of second-generation immigrants alongside immigrants with *long residency* in Norway. Looking at MA-level university graduates, Brekke (2007*a*) found that time between graduation and first regular employment is longer for immigrant candidates with education acquired in Norway. However, income disadvantages were found only for candidates with different African backgrounds. In certain fields, people of Asian national ancestries had faster transition rates than the native majority. Wiborg (2006) found that graduates from Norwegian universities with non-Western backgrounds had lower earnings than native majority individuals. This tendency holds even when comparing individuals with equal grades within the same subjects. However, the earnings of the non-Western candidates increased more rapidly with labor-market experience than among the native majority candidates.[18] Brekke and Mastekaasa (2008) found that the earnings and employment gaps of immigrants with Norwegian higher education qualifications decline with time of residency. However, holding time of residency constant they found a tendency of growing earnings differences between male immigrants and native men over the career. For immigrant women this trend was not evident, but among women the employment gap increased with time since graduation. They speculate that this trend, at least partly, can be explained by supply-side effects reflecting

[18] Wiborg categorize the immigrant population by different geographical regions and his findings are most relevant for persons with background from Africa and Latin-America, when including controls for different forms of human and social capital the differentials disappear for the Asian category (Wiborg 2006:295).

choices made by the women, or their households, in connection with marriage and child rearing (Brekke and Mastekaasa 2008:521).

In 2007 a comprehensive cross-national study of labor-market outcomes among ethnic minorities in Western European and selected other affluent countries was published (Heath and Cheung 2007*b*). The 13 country-level studies primarily looked at avoidance of unemployment and occupational class attainment, with a special focus on the experience of second-generation immigrants. The same design was replicated for each national case, which allowed for cross-national comparisons of ethnic disadvantages in labor-market outcomes. Diversity in outcomes between countries and immigrant groups were found. After taking account of differences in educational qualifications, second-generation immigrants of non-European ancestry primarily experienced ethnic disadvantages in avoidance of unemployment in Sweden and Britain, and the classic immigration countries of Australia, Canada, and the USA. In other European countries, such as Austria, Belgium, France, Germany, and the Netherlands, second-generation immigrants of non-European ancestry experienced ethnic disadvantages in both avoidance of unemployment and access to advantaged occupational class positions (see Heath (2007) for a summary of the cross-national findings). Unfortunately, Norway was not included in this study. Since I replicate the design used in the country-level studies in Heath and Cheung (2007*b*) this study is intended to fill this gap and provide comparable results for the Norwegian case.

Summary and contributions to knowledge

This review has shown that the second-generation immigrant population in Norway is diverse with respect to educational attainment. Before taking account of between-group differences in educational qualifications we should therefore expect diversity in labor market outcomes between the different second-generation immigrant groups. Fekjær (2007*b*) advocates for a continued focus on the impact of social origin among second-generation immigrants in Norway. In this study I will explore intergenerational social mobility among second-generation immigrants, by looking at the impact of between-group differences in social origin upon access to advantaged occupational class positions.

Furthermore, previous research has not investigated whether between-group differences in social origin continues to have direct effects on labor market outcomes of second-generation immigrants, even when differences in educational qualifications are held constant. Focusing on the native majority population, previous research has documented such origin effect in Scandinavian countries (e.g., Erikson and Jonsson 1998; Hansen 2001;

Mastekaasa 2004). Differences in social, cultural, and economic resources in families of origin are viable (part-) explanations of labor market disadvantages among second-generation immigrants in Norway (Jonsson 2007; Heath et al. 2008). Brekke (2008) argues that further studies on labor market outcomes among second-generation immigrants in Norway should as far as possible investigate the impact of social origin and differences between national ancestry groups.

In this perspective, the current study contributes with important new knowledge in the Norwegian context: First, this is the first study that traces the intergenerational social mobility of second-generation immigrants into the labor market. Second, it is the first study of occupational class attainment among second-generation immigrants. So far, this is an unmapped area in the Norwegian context, much in need of study (Heath et al. 2008). The simultaneous investigation of the impact of social origin *and* educational qualifications on labor-market outcomes between different national ancestry groups of second-generation immigrants is also novel. As I discussed above, the design chosen makes the results reported comparable to other country-level studies of occupational class attainment in Western European countries (e.g., Heath and Cheung 2007*b*). This enables me to situate the level of ethnic disadvantage in occupational attainment among second-generation immigrants in Norway in a comparative perspective.

2.2 Class analysis, occupational class positions, and the EGP schema

Class analysis can be defined as "the empirical investigation of the consequences and corollaries of the existence of a class structure defined *ex-ante*" (Breen and Rottman 1995a:453). This is a deductive approach which defines classes and a class structure theoretically and relationally, not inductively from the consequences of class.

The EGP class schema is often described as neo-Weberian. Weber (1946) argued that the social and the economic order were not identical, his distinction between class, status, and party is well known. Class does not refer to social groups or communities as such, but rather to "any group of people that is found in the same class situation" (Weber 1946:180). Classes and class situation is contrasted to status groups, which are linked to specific styles of life and normally are constituted and determined by a "specific, positive or negative, social estimation of honor" (Weber 1946:189). Following Weber, Goldthorpe and colleagues understand social class as a purely *economic* concept, i.e. as deriving from social relations within economic life (e.g., Goldthorpe and McKnight 2006; Chan and Goldthorpe 2007). The conceptualization of the class schema is meant to differentiate *posi-*

tions within labor markets and production units. In broad terms they derive a "basic, threefold division of class positions" (Erikson and Goldthorpe 1992:37) based on what relations the positions have towards the means of production within society, these are employers, the self-employed, and employees. Goldthorpe and Erikson (1992) make considerable elaborations on this threefold division by differentiating within the group of employees, with a focus on different forms of employment regulation and employment contracts.[19] The main differentiation is between those positions that are regulated under a labor contract and those that are regulated by a service relationship to the employer:

> "Employment relationships regulated by a labour contract entail a relatively short-term and specific exchange of money for effort. Employees supply more or less discrete amounts of labour, under the supervision of the employer or of the employer's agents, in return for wages that are calculated on a 'piece' or 'time' basis. In contrast, employment relationships within a bureaucratic context [i.e. the service relationship] involve a longer-term and generally more diffuse exchange. Employees render service to their employing organization in return for 'compensation', which takes the form not only of reward for work done, through a salary or various perquisites, but also comprises important prospective elements – for example, salary increments on an established scale, assurances of security both in employment and, through pensions rights, after retirement, and, above all, well-defined career opportunities" (Erikson and Goldthorpe 1992:41-42).

Employment contracts arise from specific relations between the employees and the employer, either as an individual or as an organization, more specifically, from "the problem that employers face of ensuring that employers act in the best interests of the firm" (Breen 2004a:10).[20]

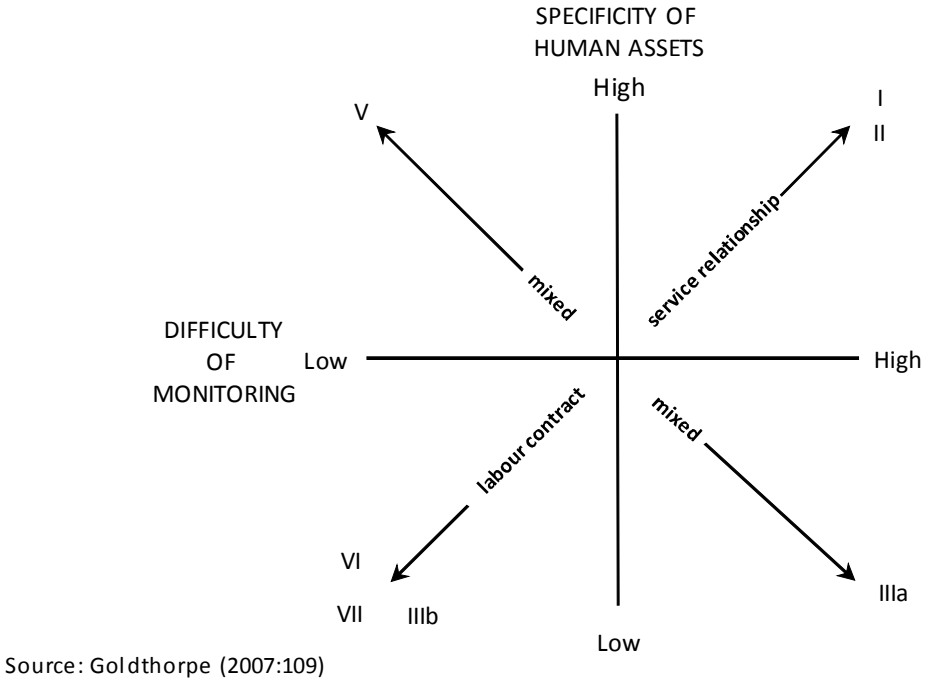
According to Goldthorpe (2007) work is differentiated along two crucial dimensions (see Figure 2.1): (i) the extent of *monitoring difficulty* in the work situation, which arise in a situation where the employer is not directly able assess to what degree the employee is acting according to the employers interests; and (ii) the degree of human capital '*asset-specificity*' – skills, expertise, and knowledge – involved in and required for the work-performance, that is, "the degree to which productive value would be lost if these assets were to be transferred to some other employment" (Goldthorpe 2007:109). In relations where the extent of monitoring difficulty and the degree of human capital 'asset-specificity' is high, a service relationship will arise. These are contrasted to jobs with tasks

[19] These revisions are made because employees are numerically dominating, making up approximately 85-90 percent of the active population in modern societies (see Goldthorpe 2007:103).

[20] The problem of the employment contracts arise from 'principal-agent'-relationships (for a review of sociological applications, see Petersen 1992), i.e. where "a principal (the employer) engages an agent (the employee) to act in the principal's interest in circumstances in which the principal cannot observe the agent's actions, nor share in all of the information guiding those actions" (Goldthorpe 2007:113). Goldthorpe (2007:113) argues that in situations where work is easily supervised and highly commodified such a relationship does not entail, but it takes on a special force where "employees act in a professional, administrative, or managerial capacity".

that require more general, non-specific skills. It is important to keep in mind that the contrast set up between the labor contract and service relationship is of an ideal-typical kind, where the two should be viewed as the ends of a conceptual continuum. Actual employment relationships only partly approximate the one or the other, or fall ambiguously between the two. What is primarily of interest for us is that different employment relations give rise to systematic inequality between incumbents of different positions.

There is widespread agreement that the EGP class schema gives a good description of "the geography of social structure" (Sørensen 2000:1526), i.e. pointing to distinct class positions endowing their incumbents with different rewards and life chances. The class schema has been widely tested for its construct validity and explanatory effects (e.g. Evans 1993; Evans and Mills 1998; Evans and Mills 2000; Goldthorpe and McKnight 2006) and is widely used in comparative research on social mobility and class stratification (e.g. Erikson and Goldthorpe 1992; Shavit and Blossfeld 1993; Shavit and Müller 1998; Breen 2004*c*).[21]



Source: Goldthorpe (2007:109)

***Figure 2.1**: EGP class locations, dimensions of contractual hazard, and employment contracts.*

[21] However, there has been some critique of the classificatory principles underpinning the schema and how the labor market positions of women have been incorporated into the schema (e.g., Birkelund, Goodman and Rose 1996; Tåhlin 2007).

Table 2.1: *Categories of the EGP class schema and forms of employment regulation*

Class[a]	Description	Form of regulation of employment
I	Professionals and managers, higher grade	Service relationship
II	Professionals and managers, lower grade; technicians, higher grade	Service relationship (modified)
IIIa	Routine non-manual employees, higher grade	Mixed
IIIb	Routine non-manual employees, lower grade	Labour contract (modified)
IV[b]	Petty bourgeoisie: small proprietors and employers and self-employed workers	No regulation of employment
V	Technicians, lower-grade supervisors of manual workers	Mixed
VI	Skilled manual workers	Labour contract (modified)
VII	Semi- and unskilled manual workers	Labour contract

[a] This table is adapted from Goldthorpe (2007*b*:104). The implementation of the EGP class schema used in this study is based on a coding by Flemmen and Andersen (2009), see data and methods section for details. [b] Because of lack of data information this class is operationalised by ad-hoc principles, see data and methods section for details.

Table 2.1 displays a seven-class version of the EGP class schema, and describes the type of work the classes include and the form of employment that apply. The EGP classes are not constructed around any single hierarchical ordering-principle. However, Erikson and Goldthorpe (1992:45) argue that there are good reasons for introducing a threefold hierarchical division which could be "more-or-less equally taken as ordering class positions in terms of their prestige, socio-economic status, or 'general desirability'". Based in this threefold division, I differentiate between advantaged, intermediate, and less advantaged occupational positions (EGP classes given in brackets). The most advantaged professional, administrative, and managerial positions, regulated by a service relationship, constitute the service class (I and II). Higher level routine non-manual work (IIIa), self-employed persons (IV), and skilled manual work and supervisors (V and VI) are grouped into intermediate occupational class positions. The least advantaged positions constitute positions in less skilled non-manual routine work and manual work (IIIb and VII).

The five-class version of EGP class schema, which I employ, is identical to the one used in the comparative study of occupational class attainment among immigrants in the labor markets of selected Western European countries (see Heath and Cheung 2007*b*).

2.3 Intergenerational mobility, social fluidity, and ethnic minorities

Theories of intergenerational social mobility address how resources possessed by one generation shape the career paths of members in the following generation, and, in particular, how this relationship is shaped by "the interaction of resources possessed by families and their children and the demands of the labour market, most often directly expressed in the

hiring decisions of employees and employing organizations" (Breen 2004b:391). When studying intergenerational social mobility we are interested in social fluidity, which is interpreted as a measure of general societal openness pertaining to the extent that access to specific social positions are equally or unequally distributed. Social fluidity, or relative mobility, is concerned with the relationship between social origins and destinations, and is specifically "based on the comparison, between people of different class origins, of their chances of being found in one destination class rather than another" (Breen 2004a:4). As such, this is a relative, not an absolute concept. It refers to a comparison between different individuals' *chances* of attaining specific social class positions in adult life, relative to their initial social positions, rather than the actual attainment measured in absolute numbers.

However, as discussed earlier, societies can be closed along different dimensions than those of social class, where ethnicity is such an alternative dimension. If ethnic minorities experience similar levels of relative intergenerational social mobility compared to the ethnic majority population, this could be an indication of a society's openness towards ethnic minority achievement (Hout 1984; Platt 2005*b*). To explore the social mobility of ethnic minorities I compare individuals of similar social origins, but different ethnic background, with respect to their chances of being found in one destination class rather than another. These analyses are mainly descriptive and only report the 'black-box' relationship between social origins and destinations in different groups. However, they tell us whether the patterns of intergenerational social mobility found in previous research educational attainment is also observed after the transition into the labor market.

The analyses reported in Chapter 5 in this study explore the intergenerational social mobility of second-generation immigrants compared to the native majority. To simplify the analyses I focus on intergenerational occupational 'success', by looking at relative access to advantaged occupational positions. I measure this as the binary outcome of access to service class positions, contrasted to all other social class destinations, contingent on the social origin and national ancestry of the individuals. Higher levels of service class attainment among ethnic minority individuals relative to ethnic majority individuals, contingents on similarity in social origin has been employed as a *crude* measure of intergenerational social mobility among ethnic minorities in previous studies (see Heath and McMahon 2005; Platt 2005*b*). The central question of this query is therefore, do second-generation immigrants experience similar chances of occupational success as their native majority peers of similar social origins? To paraphrase Duncan (1968), do we observe inheritance of social origin or of ethnic minority status?

In the analyses reported in Chapter 6 and Chapter 7 I include information on the individuals' educational qualifications, in order to disentangle central mechanisms behind occupational stratification among second-generation immigrants in Norway.

2.4 Disentangling central mechanisms behind occupational stratification

Studies of occupational attainment investigate the processes allocating individuals into different positions in the occupational class structure. Occupational class attainment can be investigated as the outcome of a two-step process: (i) individuals first have to gain access to *employment* in the labor market, and then (ii) they are allocated into different *occupational positions* within the labor market. In this study I analyze both outcomes separately. These analyses primarily focus on the impact of *educational qualifications* for occupational attainment among second-generation immigrants, but I also scrutinize the impact of social origin. Hence, these analyses explore the central role of educational attainment in the process of intergenerational social mobility (cf. the OED triangle in Figure 1.1 and the OMED model in Figure 1.2 in Chapter 1).

In these analyses I employ a theoretical framework for explaining inequality in labor-market outcomes, which combines sociological and economic perspectives. Neoclassical economics divides the labor market into two sides, which offers two main sources of inequality between workers (e.g., Torp, Barth and Magnussen 1994): On the one hand, supply-side explanations refer to characteristics, actions, and labor-market orientations of (prospective) employees. Employees can differ in their *performance*, due to differences in educational qualifications or other job-relevant resources. On the other hand, demand-side explanations refer to what employers (and their agents) do and how work-organizations operate. Employees and job applicants can experience differential *treatment* by employers even though their (potential) labor-market performance is equal, and this can give rise to systematic labor-market inequality. Economic sociologists have paid more focus to the structural environment and how labor-market outcomes also depend on matching-processes between employers and employees (e.g., Granovetter 1981; Sørensen and Kalleberg 1981). That is, how labor markets and economic action are *embedded* in social structures extending beyond the economic sphere and how social networks mediate flows of information between the actors in the labor market (Granovetter 1985). In an article where he tries to merge sociological and economic perspectives on labor-market inequality, Granovetter (1981:12) extends the neoclassical framework by pointing to *three* main factors contributing to inequality in labor-market outcomes between workers:

(i) characteristics of the *individuals* accessing a given job,
(ii) characteristics of the *employers* (and the job), and
(iii) how employees (i) and employers (ii) become *linked* together, through matching processes.

This general framework was initially developed to explain differences in income, but is aptly suited to analyze processes of occupational class attainment. In Norway, Rogstad (2000) used this perspective in an extensive ethnographic study of labor market outcomes among visible minorities, with an explicit focus on matching processes between visible minority employees and native majority employers. In this study I investigate occupational class attainment among second-generation immigrants. By focusing on occupational class attainment it is possible to assess whether processes of matching between employees and employers operate differentially in different parts of the labor market (as defined by the EGP class schema).

Below I present different sociological and economic perspectives that can contribute to explanations of inequality in labor-market outcomes between second-generation immigrants and native majority individuals. I try to sketch out specific mechanisms and discuss whether it is likely that they will apply in the Norwegian case.

Human capital theory, educational signaling, and second-generation immigrants

Differences in access to employment and occupational class attainment between the native majority and ethnic minority groups could be explained by between-group differences in educational qualifications and job-relevant skills. From the human capital theory we can derive expectations of a meritocratic labor market, where different outcomes are explained exclusively by differences in *performance*.

Human capital theory is based in the neoclassical economics paradigm, which assumes perfectly competitive markets where rational actors have access to perfect information and makes instrumental decisions based on this information. The central argument is that rational workers invest in human capital, i.e. formal education and on-the-job training, to improve their labor-market outcomes and returns (Mincer 1974; Becker 1993). This human capital is imbedded in the individuals and, thus, improves their marginal productivity in the labor market. Becker (1993:31) argues that the employees' productivity and their wages is proportionally related. Labor market outcomes are understood as equilibrium

states between the employees' supply of skills and labor and the employers' demand for the same. Furthermore, rational profit-maximizing employers will only reward individual employees according to their marginal productivity. The more productive individuals are, the better their labor-market outcomes should be. If we expect employers to profit-maximize it is irrational for them to discriminate between employees on other grounds than differences in human capital, i.e. job productivity. Employers who discriminate on other grounds fail to maximize profit, by hiring employees below the optimal level of productivity. From these basic assumptions the theory has the strong empirical implication that individuals with higher levels of human capital are more productive than people with less, and therefore experience higher earnings and better labor-market outcomes (Card 1999). From the human capital theory we should therefore expect differences in access to employment and to occupational positions to be a function of individual's marginal productivity, i.e. their job-relevant skills learned through formal education and on-the-job training.

Before individuals acquire work experience, i.e. on-the-job training, formal education is considered the most important determinant of an individual's productivity level. At this stage, formal educational qualifications may work as a *signal* of the abilities and potential future productive capacity of a job-applicant (e.g., Arrow 1973; Spence 1973; Stiglitz 1975). In the process of hiring, employers may not have access to secure information about the job applicants 'real' (potential) work-productivity. In this situation, a job applicant's educational credentials function as a *costly* signal of productivity to employers. Hence, signaling theorists claim that (higher) education not necessarily cause higher productivity, but works as a filter or screening device that "sorts out individuals of differing abilities, thereby conveying information to the purchasers of labor" (Arrow 1973:194).

In summary, the human capital and educational signaling perspectives makes is reasonable to expect individuals with similar educational qualifications to follow similar career paths. Irrelevant economic factors and ascribed statuses, such as gender, ethnic minority status, and social origin, should not have an impact on individual labor-market outcomes in access to employment and in occupational attainment throughout the career. In the analyses I explore the impact of human capital on access to employment and occupational attainment by looking at the impact of formal educational qualifications. Furthermore, I control for age as a proxy for years of labor force experience. As such, age functions as a crude proxy measure of accumulated human capital in the form of on-the-job training and work experience.

If we are interested in ethnic minority disadvantages in the immigrant population, the human capital and educational signaling perspectives makes it strategically important to examine labor-market outcomes among second-generation immigrant (Heath and Cheung 2007*a*). There is reason to believe that two important supply-side explanations of labor market disadvantage among first-generation immigrants will not apply to the situation of second-generation immigrants (see, e.g., Banton 1994; Kalter and Granato 2007).

First, the term 'country-specific' human-capital (Chiswick 1978) was introduced to capture the argument that human capital in many cases is specific to country where it was acquired or, at least, that transferability between countries is limited. Upon their arrival, immigrants often lack knowledge about the destination country language, its customs, and knowledge about the labor market. Furthermore, they may face difficulties in having educational qualifications and work experience acquired abroad validated (e.g., Carliner 2000; Friedberg 2000; Chiswick and Miller 2002).[22] In Norway, language fluency could be a particularly potent 'country-specific' barrier for immigrants, since Norwegian language is not spoken in other parts of the world.

Second, it is not unlikely that immigrants systematically differ from the native majority with respect to labor-market orientations and human capital investments due to a so-called sojourner orientation (e.g., Piore 1979; Dustmann 1993). If immigrants harbor plans about returning 'home' after a temporary stay in the destination country then they might be more reluctant about (long-term) investments in human capital that seems specific to the destination country. Furthermore, differences in time preferences could lead them to make different trade-offs than individuals in the native majority. For example, temporary immigrants might seek high monetary returns and risky work in the short run, instead of more secure and stable work in the long run.

If we turn to second-generation immigrants, the main argument is that these standard explanations of differences in labor-market performance should not apply to their situation. Second-generation immigrants will have acquired all their educational qualifications from domestic schooling institutions, similar to the native majority. Furthermore, they will have received all their secondary socialization in Norway, and hence they are likely to be fluent in Norwegian language and have acquired knowledge about the society and

[22] From this perspective, immigrant labor market disadvantages should decline with time since arrival, i.e. they have steeper age-earnings profiles than the native majority. Their initial low starting point is explained by a lack of human capital specific to the destination country, but as destination-specific human capital is acquired the immigrant disadvantage gradually diminish. This pattern has been documented among immigrants in Norway (e.g., Hayfron 1998; Longva and Raaum 2003; Barth and Raaum 2004)

culture. The country-specificity of their human capital and the signaling quality of their educational qualifications should not differ from the native majority. Furthermore, second-generation immigrants most likely consider Norway as their 'home'-country, although they may nurture transnational ties to their parent's country of birth (via family and extended kinship networks). Hence, their long-term orientations toward human capital investment and labor-market behavior should be comparable to those of their native majority peers (Heath and Cheung 2007*a*).

In conclusion, both the human capital and the educational signaling perspective give strong theoretical reasons to expect that the labor-market performance of second-generation immigrants is comparable to native majority individuals with similar educational qualifications.

Disparate treatment theories of employment discrimination

The labor market outcomes of individuals are also contingent upon the actions and orientations of employers (and their agents).

In Norway, the Working Environment Act of 1977 includes statements about the illegality of employment discrimination based on ascribed characteristics, and is meant to ensure equal treatment of job applicants and employees against discrimination based on for example ethnicity, religion, and phenotypic appearance. As of January 1, 2006 the legal framework protecting against employment discrimination was strengthened with the introduction of the Anti-Discrimination Act (see KRD 2004), which explicitly focuses on racial discrimination.

Within the employment discrimination literature it is customary to distinguish between two main forms of employment discrimination (e.g., Petersen 2005): (i) disparate treatment discrimination, or direct employment discrimination, is found when employers treat individuals with equal qualifications and productive capacities differentially, based on ascribed traits and imputed group membership (see Altonji and Blank 1999:3168), and (ii) disparate impact discrimination, or structural discrimination, where rules, procedures, and contextual factors governing the hiring process or work situation confer advantage on one group over another. Below, I present the main disparate *treatment* theories of employment discrimination. However, it must be noted that it is difficult to measure the presence of disparate treatment discrimination using quantitative data, since it can only be inferred indirectly. This study is only able to ascertain whether there exist differences in access to employment and advantaged occupational positions between second-generation immi-

grants and the native majority. It is therefore important to note that even after controlling for central human capital variables and individual characteristics observed gaps in labor-market outcomes can be a product of unobserved and, thus, unmeasured heterogeneity between members of different groups (Heath and McMahon 1997).[23] Notwithstanding these measurement problems, the possible existence of disparate treatment discrimination is an important factor to take into account when assessing whether second-generation immigrants face disadvantages in getting access to employment and different occupational positions compared to native majority individuals with similar educational qualifications.

In a native majority labor market context, such characteristics as foreign sounding names and phenotypic appearance function as signals to employers. Hence, second-generation immigrants can be singled out as visible minorities by employers, who subsequently may evaluate and treat them differentially from native majority individuals (e.g. Rogstad 2000). In this case it is not important that second-generation immigrants differ from their immigrant parents, if employers *believe* that they do not and evaluate them similarly as members of visible minorities. There exists a rich social-psychological literature documenting how our minds act upon cognitive biases and implicit stereotypes (for discussions of sociological relevance, see Reskin 2000; Petersen 2006; Quillian 2006).

In his seminal work on the 'economics of discrimination', Becker (1971) presented what is referred to as preference or taste discrimination. According to Becker this form of discrimination is found if individuals – employers, employees, or customers – have a preference towards not interacting with members of another group.[24] They act as if they "were willing to pay something, either directly or in the form of reduced income, to be associated with some persons instead of others" (Becker 1971:14). Preference-based discrimination is economically irrational for employers in the context of competitive market, since they will lose productivity by not hiring the most able and productive employees. In a competitive market, one should over time expect preference-based discrimination to disappear because

[23] If the goal is to test a causal hypothesis of disparate treatment discrimination, the use of properly conducted randomized experiments in the form of field audit studies would be superior to the statistical analysis of cross-sectional data (Heath and Cheung 2007a). In audit studies, one arranges experiments where job applications or job applicants are matched on all relevant background characteristics except the characteristic one expects employers to base their discrimination upon, this way one can test the presence of disparate treatment (see Riach and Rich 2002; Bertrand and Mullainathan 2004). Using the audit study design, Carlsson and Rooth (2007) approximated employer discrimination to make up approximately 1/6 of the labor market disadvantages of ethnic minorities in the Swedish labor market. So far, audit studies have not been employed in Norway (Midtbøen and Rogstad 2008).

[24] The theory extends beyond situations where the employer is the prejudiced actor. In some situations, persons on whom the employer is dependent on to maximize profit in business are the ones that are prejudiced, such as other employees or consumers (Becker 1971). In this situation the employer is referred to as an unprejudiced discriminator (Merton 1947).

discriminating employers will run out of business. In the face of persisting labor market discrimination the neoclassical model faces a serious problem, since it is forced by its own assumptions to the conclusion that discrimination can only be temporary (Darity and Mason 1998:81).[25]

Differential treatment of employees and job applicants may, however, also arise in situations where the employers do not act upon economically irrational preferences. In situations of asymmetrical information, differential treatment may arise as the outcome of rational actors risk-averse decisions (e.g., Akerlof 1970). As discussed above, educational credentials can serve as a *signal* of the future productivity of a job applicant. However, for risk-averse employers the visible minority status of a second-generation immigrant can function as a signal to employers (e.g., Spence 1973). If the employer lacks full or reliable information on the 'true' productivity of a worker in the hiring situation it may be costly to retrieve this, instead the employer may choose to rely on heuristic principles about imputed group differences in order to make the hiring decision. On the one hand, we have 'error discrimination' (England 1992:60). In a context of uncertainty the employer bases his or her decision on the 'false' belief that members of a specific group on average differ in productivity. Like preference-based discrimination, this form of discrimination is expected to disappear in a competitive market if we follow the neoclassical model, since employers acting upon wrong information about worker productivity will run out of business or update the information they act upon. On the other hand, however, we have theories referring to so-called 'statistical discrimination' (e.g., Arrow 1972; Phelps 1972; Aigner and Cain 1977). Here, in contrast to 'error discrimination', the imputed group differences are based on 'correct' statistical approximations. The important difference in this case is that discriminating employers will not run out of business. Instead, if evaluation of the qualifications and the productivity is costly, it may from the employer's perspective be rational to treat an individual's productivity capacity according to some statistical forecast on the average level of some work relevant characteristic of the group that the individual is part of (Altonji and Blank 1999:3180). Statistical discrimination is therefore based on a fallacy of levels. Groups could be assumed to differ with respect to their mean level of productivity, in the variance of this mean productivity level, or in the reliability of the tests measuring the productivity level (England 1992:56). To sum up, since statistical discrimination is

[25] However, recent theoretical extensions of preference-based discrimination, incorporating information search-costs, are not forced by their assumptions to view negative preferences as temporary phenomena. Furthermore, in monopsonistic theories of discrimination, i.e. where one employer dominates the demand for work, taste based discrimination can also persist (for a thorough review of theories of labor market discrimination, see Altonji and Blank 1999).

based on 'true beliefs' about average between-group productivity differences it could be an economically rational response to a situation of asymmetrical information – albeit not morally defensible. The implication of this is that statistical discrimination need not necessarily be a temporary phenomenon. In the context of a competitive market situation statistical discrimination may persist, if between-group differences in relevant job-characteristics, such as educational qualification levels, still persist. In cases where there hardly are any job-relevant productivity differences between second-generation immigrants and the native majority, we should not expect statistical discrimination to be justified. However, if employers believe that differences exist and act upon (false) stereotypes (i.e., error discrimination) in the context of imperfect markets, then this form of discrimination can be sustained.

In an innovative article, Petersen and Saporta (2004) shift focus away from the motives for employers to discriminate, and instead provide a analytic framework for investigating the 'opportunity structure for discrimination'. As a central *premise* they claim that employer discrimination is widespread; instead they ask in what arenas it is feasible for employers to indulge in differential treatment of similarly qualified (prospective) employees, in a context where employment discrimination is illegal. They argue that allocative discrimination, which they define as differential treatment of individuals at the point of hire and in subsequent allocation to positions and career promotions, is the form of discrimination that we should expect to be most widespread.[26] In particular, they argue that the *hiring* process is the point where discriminatory practices are most feasible. With basis in the opportunity structure perspective, they argue that it is very difficult to muster unambiguous information and evidence of discriminatory treatment at this point. Furthermore, one frequently lacks a specific complainant to press charges due to this lack of information. However, once employment is secured, information and evidence of discriminatory practices is more easily available and a complainant is clearly identifiable in the hired employee. Hence, from Petersen and Saporta's (2004) conceptual analysis and empirical evidence we should expect discriminatory practices by employers to be most widespread in the hiring process.

In this study I first explore access to gainful employment and, once employment is secured, attainment of different occupational positions. From arguments presented above,

[26] In addition to allocative discrimination, Petersen and Saporta (2004) distinguish between direct wage discrimination, where equally qualified individuals doing the same work receive different pay, and valuative discrimination, where certain types of work receive lower income because they are dominated by certain groups of employees.

if disparate treatment discrimination is a factor we would expect second-generation immigrants to face the most severe barriers to successful labor-market outcomes at the entrance to the labor market. Once employment is secured we expect occupational attainment of second-generation to be similar to the native majority individuals with similar educational qualifications. As discussed above, if we find differences we cannot, however, with certainty ascertain that these are caused by disparate treatment discrimination (Heath and McMahon 1997; Heath and Yu 2005).

Access to job-relevant networks as social capital

Individuals in search of jobs can mobilize their social network as an important resource. Through informal networks they may gain access to vital flows of information about job openings (e.g., Granovetter 1995). The use of informal social networks has been documented as being an important channel of employer recruitment in the Norwegian labor market. Hansen (1997) has documented that the recruitment to possibly as much as half of the job openings happens through communication in such networks. Ethnographic field studies have showed how social networks are utilized as an alternative channel of access to work for immigrants in Norway (e.g., Rogstad 2000; Sollund 2004). Rogstad (2000) described the social networks of immigrant workers in his study as parallel to those of the native majority employees in the same work place. Social network theory offers an alternative explanation of differences in labor-market outcomes between second-generation immigrants and the native majority, net of between-group differences in human capital. But is access to information in job-relevant social networks a plausible determinant of labor-market success among second-generation immigrants?

In contrast to human capital theory and theories of disparate treatment discrimination, which focus on characteristics and actions of employees and employers, social network theory focus on the *structural* preconditions for a successful matching between these two (e.g., Granovetter 1981; Sørensen and Kalleberg 1981).

For employers, social networks may function as a type of recruitment channel which minimize risk, since employers can extract information about the job-seeker from persons whom they trust and who has reliable information about him or her (Granovetter 1995). In this way, the mobilization of social networks can alter the employer's evaluation of the job-seekers' skills and qualifications. If employers disproportionately recruit new employees from the social networks of present employees, this can make it harder for persons without friends and social contacts on the inside to gain access to these jobs. Exten-

sive use of informal recruitment processes can therefore function as an (unintended) form of disparate *impact* discrimination (e.g., Petersen 2005). If the hiring practice favors certain groups disproportionately compared to others, and that this advantage is unrelated to job-relevant characteristics of the group members in the disadvantaged group, this will have a disparate impact on the labor-market outcomes of this group.

For employees, access to job-relevant social networks is an avenue where they can signal and communicate their skills and qualifications to employers. As such, network ties and contacts may therefore have an instrumental function, as a form of social capital, which individuals may mobilize in the process of getting access to employment and occupational class attainment. Social capital constitute a type of capital not inherent in persons (such as human capital) or in physical entities (such as economical capital), but in social relations between individuals (e.g., Granovetter 1973; Bourdieu 1986; Coleman 1988; Portes 1998; Lin 1999). Portes (1998:7) has defined the general concept of social capital as "the ability of actors to secure benefits by virtue of membership in social networks or other social structures". Access to flow of information about job-openings can work as an important type of social capital.

Social ties may be of both strong and weak kinds. According to Granovetter (1973) it is not the strong interpersonal ties – characterized by intimacy, emotional intensity, and reciprocal services – found in families, between close friends, and members of tightly knit social groups which are most effective for successful labor-market outcomes. According to Putnam (2000) strong social ties function as *bonding* social capital, primarily contributing to in-group solidarity. Granovetter (1973) argues that it is weak ties that form bridges that link individuals from different social circles and networks together which makes persons more mobile in the labor market. These weak ties give persons access to information, such as job openings, which they would not have had access to otherwise. The argument is that persons sharing strong ties are similar to each other and share the same type of information, while weak ties facilitate the flow of 'new' information since individuals on both sides has access to different information.

A growing international literature has shown that differential access to social networks in processes of hiring and promotion may cause ethnic minorities to experience a labor market disadvantage when compared to the ethnic majority (see, e.g., Holzer 1987; Petersen, Saporta and Seidel 2000; Petersen, Saporta and Seidel 2005; Smith 2005; Fernandez and Fernandez-Mateo 2006). Second-generation immigrants are likely to have acquired friends and acquaintances within the native majority during childhood, within the

educational system, and on other arenas. Even though we expect second-generation immigrants' social networks to be more similar to the native majority than their immigrant parents, it is still possible that they still differ from those of native majority youth with respect to ethnic composition. If second-generation immigrants grow up in residentially segregated areas they may be more frequently exposed to persons of similar ethnic background. Because of this, second-generation immigrants may be embedded in social networks which are less effective in securing work and utilizing their human capital than members of the native majority (e.g., Borjas 1992; Borjas 1995). This can refer both to the social networks of the second-generation individuals themselves, but also, importantly, to the networks of their immigrant parents. Many immigrant groups in Norway live in areas dominated by non-Western immigrants, such as the eastern parts of the capital Oslo (Østby 2004).

The impact of access to job-relevant social networks can have an impact both on access to employment and subsequent career mobility leading to occupational class attainment. Furthermore, it is not unlikely that access to social networks may differ between second-generation immigrant groups of different national ancestries. An important caveat in the analyses is that lack of access to social networks among second-generation immigrants, have similar observable empirical implications as the disparate treatment perspectives on employment discrimination.

Social origin as an interest-bearing asset

Direct effects of social origin, net of educational qualifications, on labor market outcomes is a recurrent finding in research on social stratification, referred to as 'origin effects' (Erikson and Jonsson 1998). The presence of origin effects has been documented in Norwegian labor markets, in particular with respect to access to advantaged occupational class positions (e.g., Hansen 2001; Mastekaasa 2004; Hansen 2009).

It is a viable hypothesis that inequality in labor-market outcomes between second-generation immigrants and native majority individuals is a result of different social, cultural, and economic resources in their families of origin, even after acquisition of comparable educational qualifications (Jonsson 2007). On average, second-generation immigrants of non-Western background in Norway grow up in relatively less advantaged social positions than the native majority (e.g., Østby 2004; Henriksen 2007). Native majority individuals with *advantaged* social origins might have an edge over second-generation immigrants of *disadvantaged* social origins in a competition for advantaged occupational positions, due to superior origin family resources. Hence, if we do not take account the impact of social

origin for labor-market outcomes, we risk conflating social origin and ethnic minority disadvantages (Heath et al. 2008).

In their effort to gain access to advantaged occupational class positions individuals may mobilize different types of family resources independently of their educational qualifications (Goldthorpe 2007:173). However, the underlying mechanisms that produce direct social origin effects are somewhat opaque.[27] In an article describing social class as an interest-bearing asset, Erikson and Jonsson (1998) discuss different plausible mechanisms producing 'origin effects' which can be related to the above-mentioned perspectives of marginal productivity, discrimination, and social networks.

First, they argue that origin effects could be caused by different access to informal social networks. Individuals of advantaged social backgrounds may draw upon assistance from parents, relatives, and friends in order to get access to occupational positions. Furthermore, in crucial situations and career transitions individuals with advantaged origins may also reap advantages of economic support and security from their parents.

Second, persons from advantaged social origins may have intimate knowledge of correct ways of self-presentation and conduct in prestigious elite circles. Access to subtle *savoir-faire* skills may enable them to 'look good and sound right' in work situations where this might be crucial for success (Goldthorpe 2007:175). These processes can either be envisaged as the outcome of *discriminatory* practices by employers – where they favor employees similar to themselves – or in some occupations, as Erikson and Jonsson (1998) argue, knowledge of these kinds of manners could enhance the *productivity* of the employees. In some occupations and work situations mastery of particular cultural, social, or personal skills are highly valued and contribute to job-productivity, beyond formal educational qualifications. Favoritism, on the other hand, is a form of preference-based discrimination, akin to the theory of homosocial reproduction, where employers disproportionally favors, hires, and promotes persons similar to themselves (Kanter 1977). However, making distinctions between these two mechanisms is a slippery slope, where evaluations are very delicate and difficult (Erikson and Jonsson 1998:32-33).

Finally, Erikson and Jonsson (1998) argue that individuals of advantaged social class backgrounds could have higher work aspirations than their peers of less advantaged

[27] It is not clearly understood at which point of a person's career that such effects appear (Erikson and Jonsson 1998). Some argue that they are most apparent early in the career, because parents can make use of their social positions, contacts, knowledge, and economic resources to give their children a 'flying start' in the transition from education to work. Others argue that the effects emerge gradually through Matthew-effect (Merton 1973) mechanisms, where individuals accumulate advantages associated with their social origin throughout their careers (e.g., DiPrete and Eirich 2006).

backgrounds. In particular they could be more strategic and career-oriented, compared to peers they may "strive more actively and persistently for highly prestigious and rewarded positions" (Erikson and Jonsson 1998:33). However, from the social position and relative-risk aversion theories we can derive a reverse argument, i.e. that persons of less advantaged social origins that attain higher-level educational qualifications are positively selected for higher aspirations than their peers of more advantaged social origins, *ceteris paribus* (e.g., Boudon 1974; Mare 1980; Breen and Goldthorpe 1997). It is possible that higher educational aspirations could spill over in higher aspirations toward work and career. Furthermore, following this line of argument, if second-generation immigrants have higher educational aspirations than their social origin peers in the native majority, this immigrant 'drive' could also spill over to their work aspirations and career-orientations. This *could* give them advantages in the process of occupational attainment when compared to native majority individuals of similar social origins and with similar educational qualifications.

In conclusion, direct effects of social origin on individual labor-market outcomes have been documented in Norwegian labor markets. If second-generation immigrants experience differential occupational class attainments compared to the native majority, part of these disadvantages could be explained by their relative lower social origin. Comparing second-generation immigrants with native majority individuals of similar social origin should enable us to bracket out these possibly confounding origin effects. Specifying what mechanisms that produce origin effects is, however, not possible with the type of data I utilize in this study.

2.5 Summary of empirical expectations

Below I summarize and clarify the empirical expectations we can derive from the review of previous research and discussion of theoretical perspectives in this chapter. In Figure 2.2, I summarize the expected empirical relationships between the main variables used in the subsequent analyses. Three main types of mechanisms that could affect the impact of educational attainment differentially due to minority status and social origin are inserted into the model as mediating factors upon labor-market destination.

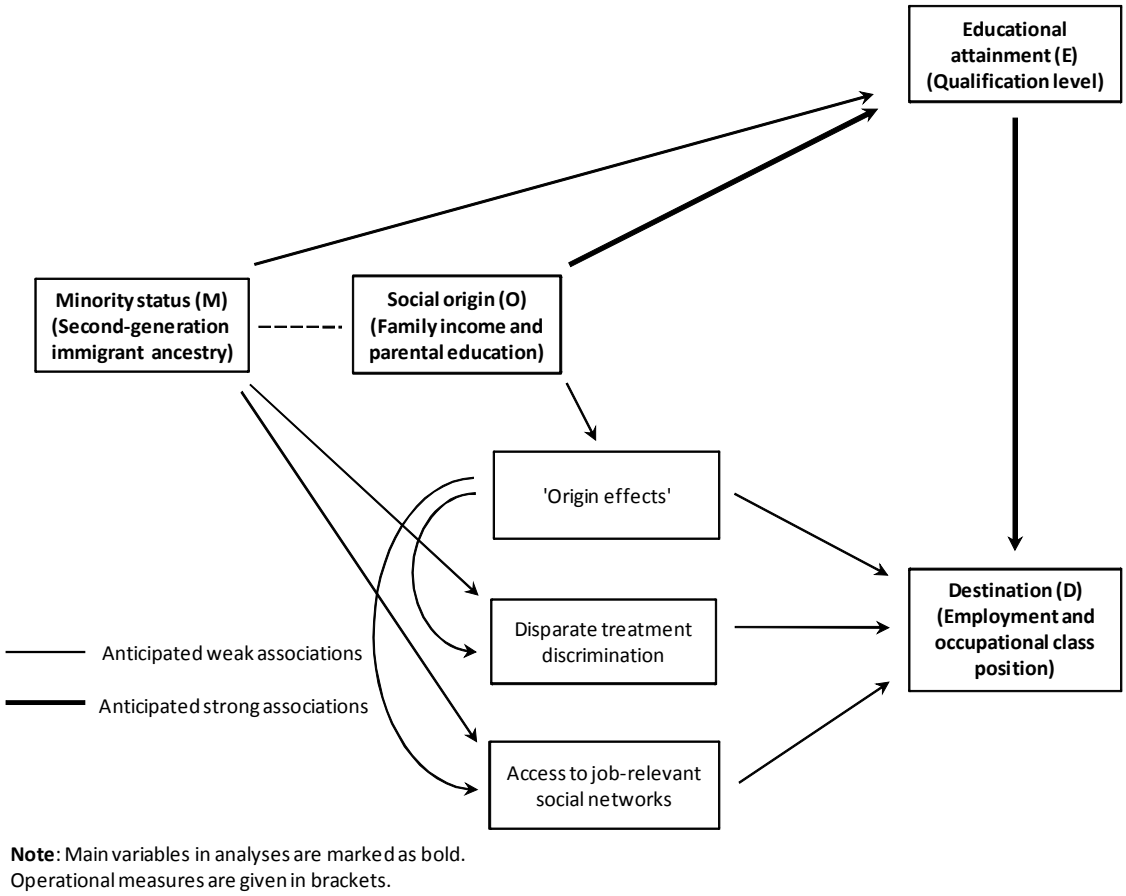


Figure 2.2: *The OMED model with empirical expectations and possible mechanisms.*

In the first set of analyses, I explore the relative impact of social origin and national ancestry upon service class attainment for native majority individuals and second-generation immigrants. When holding social origin constant, we can interpret different levels of access to positions in the service class between second-generation immigrants and the native majority as a crude measure of intergenerational social mobility. The question explored is whether second-generation immigrants are more or less likely to occupy service class positions compared to their native majority peers with similar social origins.

In the two following sets of analyses I introduce information on educational qualifications, to explore the central role of educational attainment in the process of occupational class attainment.

In the second set of analyses, I explore the impact of educational qualifications, social origin, and national ancestry upon access to gainful employment for native majority individuals and second-generation immigrants. From the human capital and educational signaling perspectives we have strong reasons to expect that (higher-level) educational qualifications will have an equally strong positive effect upon access to employment for

second-generation immigrants and native majority individuals. However, second-generation immigrants could experience tougher barriers in getting access to employment than native majority individuals with similar educational qualifications. This could both be caused by disparate treatment discrimination by employers or it could arise due to second-generation immigrants' lack of access to job-relevant networks on par with the native majority. Due to the legal environment, where employment discrimination is illegal, there is reason to expect that employer's opportunities for indulging in discrimination is largest in the hiring process. Furthermore, second-generation immigrants could face disadvantages in access to employment due to less advantaged social origins compared to many individuals in the native majority.

In the third set of analyses, I explore the impact of educational qualifications, social origin, and national ancestry upon access to different occupational class destinations for native majority individuals and second-generation immigrants, among those who have secured gainful employment. In this analysis we also derive expectations from the human capital and educational signaling perspectives that (higher-level) educational qualifications has an equally strong positive effect upon access to advantaged occupational class positions for native majority individuals and second-generation immigrants. Here also, disparate treatment discrimination and lack of access to job-relevant social networks can have a negative impact on the occupational class attainment of second-generation immigrants compared to native majority individuals with similar educational qualifications. It is, however, difficult for employers to treat equally qualified individuals unequally, once employment is secured. Hence, we should expect the presence of disparate treatment discrimination to be more limited here, than with respect to access to employment. Furthermore, second-generation immigrants might also suffer 'origin effect'-disadvantages in their occupational class attainment, due to less advantaged social origins than many individuals in the native majority.

In the next chapter I go more in detail into the data and methods employed in the empirical analyses.

3
Data and methods

This chapter describes the methodological design chosen in this study. I address strengths and possible drawbacks in how the design and dataset is suited to answer the research questions raised.

I start by describing the data sources and sample used. Then, I describe the operational definitions of the dependent and independent variables used in the analyses. Finally, I give a brief description of the statistical methods employed in the analyses.

3.1 Data set and administrative registers

The data set I utilize was made available from the project *Educational Careers: Attainment, Qualification, and Transition to Work*, supervised by Professor Arne Mastekaasa at the Department of Sociology and Human Geography, University of Oslo. These data consist of comprehensive population-wide, individual-level, longitudinal data drawn from official Norwegian administrative registers, which are gathered and managed by Statistics Norway (SSB). (See Røed and Raaum (2003) for general discussion of administrative register data.) The data used in my analyses are drawn from the National Database of Education (NUDB, see Vangen 2007) and the Panel Database Welfare (FD Trygd, see Akselsen, Lien and Sivertstøl 2007), which holds information on the entire resident population in Norway. Using unique anonymous national identification numbers we can link information from different sources together, as well as between different individuals (i.e., parents and children).

In general, population-wide register data remedies the problems of bias and non-representative sample selection in regular survey designs. In particular, the utilization of administrative register data on the entire resident population offers unique possibilities for the study of second-generation immigrants in Norway. In fact, this group is too small and diverse to be intercepted and analyzed properly using a regular survey design. With these data, I can make detailed differentiations based on national ancestry within this population. As discussed in the introduction, I focus on the four largest second-generation immigrant groups of non-Western national ancestries in the birth cohorts 1965-1980. The data sample consists of the entire population within these four groups: Norwegian-Indian (N=446), Norwegian-Pakistani (N=2,490), Norwegian-Turkish (N=581), and Norwegian-Vietnamese (N=763) second-generation immigrants. Within the selected birth cohorts all other second-generation immigrant groups were too small to be properly analyzed using quantitative methods. Furthermore, for each birth cohort a random ten percent sample is drawn from the total native majority population (i.e., individuals born in Norway by two Norwegian-born parents). The total native majority sample (N=86,925) serves as a reference group to which the second-generation immigrants are compared in all analyses. The total data sample has many observations (N=91,225), but it is important to notice that the number of observations within some second-generation immigrant groups is relatively small. This affects the statistical power of the analyses; I discuss these implications briefly in the statistical methods section below.

In general, administrative register data are considered to have high reliability, although some measurement errors may occur. However, some of the second-generation immigrant groups have higher proportions of observations lacking information on parents' income and educational qualifications. These problems are discussed below, in relation to the operational definition of the specific variables. In some analyses the missing observations are included using dummy variables and in other I censor these observations. In summary, however, I want to stress that this currently is the most comprehensive and authoritative data set that can be used to study occupational class attainment among second-generation immigrants in Norway.

3.2 Operational definition of variables

Dependent variables: Employment status and occupational class position

The dependent variable in the analyses reported in this study is a cross-sectional measurement of the individuals' employment status and occupational class positions in 2005/2006.

Occupational class position is measured using information on the individuals' registered occupation, as classified by the Standard Classification of Occupations (see SSB 2001). The individuals' registered occupations are grouped into different occupational classes using an implementation of the EGP class schema for Norwegian register data (see Flemmen and Andersen 2009).[28]

Following the design used in Heath and Cheung (2007*b*), I use a shortened version of the original EGP class schema, which distinguish between five main classes: (1) the service class (EGP I and II), (2) higher level routine non-manual (EGP IIIa), (3) self-employed individuals (EGP IV), (4) skilled manual supervisors and manual workers (EGP V and VI), and (5) semi- and unskilled work, i.e. lower level routine non-manual work (EGP IIIb) and semi- and unskilled manual workers (EGP VII). Since the Standard Classification of Occupations lacks information on self-employment, I have constructed this category using an ad-hoc revision based in information on different forms of annual income[29] (from FD Trygd), as described below. In addition to the EGP class positions, I have constructed three additional destination categories (using information on annual income from FD Trygd and data on enrolment in higher education from NUDB): (6) employed individuals with missing or unclassifiable occupation information, (7) non-employed individuals, and (8) active students.

Assignment of individuals to the different categories proceeded as follows (% of total sample given in brackets): First, all individuals that were registered as enrolled in higher education in 2006 was classified as active students (11.2 %). Second, all individuals registered with an occupational status in 2006 were assigned an EGP occupational class position, based on their occupational registration with the highest annual earnings income (68.9 %). Third, I use information on occupational status in 2005 for individuals lacking occupational information for 2006 (3.9 %). This was done because I only had detailed information on different forms of annual income from 2005 available.[30] Fourth, I use de-

[28] In addition to the Standard Classification of Occupations some sectors, i.e. Oslo municipality and maritime industries, use a different classification standard. These are included in the EGP implementation by Flemmen and Andersen (2009). Their coding is based in work by Leiulfsrud, Bison, and Jensberg (2005) and Ganzeboom and Treiman (1996).

[29] FD Trygd holds detailed information on different forms of annual income for individuals, based on official income tax records for each year. We can differentiate between earnings income (i.e., from employment), capital income (i.e., from self-employment and stock-market sales and interests), and the sum social security transfers (i.e., unemployment benefits, welfare transfers, child allowances, etc.). This information can be used to differentiate between the main source of subsistence for individuals, both within and outside the labor force.

[30] Unfortunately, due to a time lag in availability detailed annual income data were not available for 2006, when I conducted this study. This is why I use income information from 2005. This is not optim-

tailed information on different forms of annual income (taken from FD Trygd) from 2005 to assign the remaining individuals to three remaining categories (16.0 %). These categories are self-employed individuals (EGP VI), non-employed persons, and a rest category of unclassifiable individuals (detailed information on this categorization is given in the note).[31] I want to stress that my measure of non-employment is less than ideal, and must not be equated with *un*employment, which is a more precise measure of economic exclusion. The non-employment category will also include voluntary home-workers, welfare dependents, permanently disabled, etc. The non-employment categorization strategy used here is similar to the one used by Jonsson (2007).

Table 3.1: *Basic dependent variable and sample delimitations*

Original variable	EGP-class	Chapter 6: Service class attainment	Chapter 7: Access to employment	Chapter 8: Occupational class attainment
1 Service class, higher and lower level	I and II	1	1	5
2 Routine non-manual employees, higher level	IIIa	0		4
3 Self-employed persons	IV			3
4 Supervisors and skilled manual workers	V and VI			2
5 Less skilled non-manual and manual work	IIIb and VII			1 (contrast)
6 Other				Excluded
7 Non-employed persons			0	
8 Students		Excluded	Excluded	

In all analyses I use this basic source variable, but to best answer the research questions the operational definition of the dependent variable and sample delimitation differ in each of the analyses chapters (see Table 3.1). All analyses were carried out separately for men and women, since processes behind access to employment and occupational class stratification is known to work differentially by gender (e.g., Heath and Cheung 2007*a*). Furthermore,

al, but it is not unreasonable that information on income data from 2005 will give a rough approximate of source of subsistence in 2006 in the case of lacking occupational information in both years.

[31] First, individuals where *either* the sum of annual welfare transfers and unemployment benefits is higher than the sum of annual earnings and capital income *or* where annual earnings is below 1.5 BA (*grunnbeløpet*) in 2005 are labeled as *non-employed* (9.2% of total sample). The BA measure is a parameter which is used by the Norwegian pension and social welfare system to assess an individual's eligibility for a wide measure of social security benefits. For instance, in order to be eligible for unemployment insurance works must have had an earnings income of 1.5 BA or higher during the previous year. See Galloway (2009) for a more thorough discussion of the BA as a parameter of labor market integration. According to the Norwegian Labor and Welfare Administration (NAV) the BA was set at 60,699 NOK in 2005, i.e. 1.5 BA ≈ 91.049 NOK (see http://www.nav.no/page?id=1073744172 [Retrieved: February 25, 2009]). Second, all individuals who *both* had a higher annual capital income than annual earnings *and* where this annual capital income is above 1.5 BA where labeled as *self-employed* (i.e., EGP class IV, 2.9% of total sample). Third, the remaining individuals who lacked occupational information were assigned to the unclassifiable 'Other'-category (2.9% of total sample).

active students are censored from all analyses, since the labor force attachment and occupational positions occupied by these individuals probably will differ systematically compared to their post-educational labor-market status.

The dependent variable is categorical in all analyses (see Table 3.1). In Chapter 5, I look at the relative impact of national ancestry and different social origin characteristics on the probability of service class attainment (i.e., service class positions are coded 1, while all other destinations are coded as 0). In Chapter 6, I look at the impact of national ancestry, educational qualifications, and social origin on the probability of being in employment (i.e., non-employment is coded as 0, while all other destinations are coded as 1). In Chapter 7, I look at the impact of national ancestry, educational qualifications, and social origin on the probability of occupying different occupational class positions, for those individuals who are gainfully employed. I use the five-class version of the EGP class schema, where less-skilled non-manual and manual work (EGP IIIa and VII) serves as the contrast outcome.

Independent variables

The main focus is on differences in occupational attainment outcomes and access to employment between second-generation immigrants and native majority individuals, relative to their social origins and educational qualifications. Below I describe the operational definition of the independent variables used in the analyses.

National ancestry. I differentiate between the native majority and second-generation immigrants of different national ancestry based on country of origin (i.e., *landbakgrunn* in FD Trygd). For individuals born abroad this refers to their country of birth. For persons born in Norway it refers to the country of birth of their parents. In cases where country of birth differs between the parents, mothers' country of birth is used. The native majority sample consists of individuals with two Norwegian-born parents, while only individuals with two foreign-born parents are included among the second-generation immigrants.

A set of dummy variables was constructed for the four second-generation immigrant national ancestries: (1) Norwegian-Indian, (2) Norwegian-Pakistani, (3) Norwegian-Turkish, and (4) Norwegian-Vietnamese. In all analyses the native majority sample serves as the reference category to which the second-generation immigrants are compared.

Information on country of origin is an objective measure of national ancestry: It does not change over time, like citizenship does with processes of naturalization (Henriksen 2007:26). However, country of origin is not a direct proxy of ethnicity (Heath

and Cheung 2007*a*).[32] It is a central assumption in the empirical analyses that individuals with common national ancestry share specific characteristics and that differences between national ancestry groups can explain some of the variation within the second-generation immigrant population.

Educational qualifications. Individual educational qualifications are included as the principal measure of human capital in my analyses. This variable measures the highest completed educational qualification of the individuals in 2006. I use the first digit in the NUS2000 data, which is updated as of October 1 in each calendar year (i.e., *befolkningens høyeste utdanningsnivå* in NUDB). The first digit in the NUS2000-code refers to the highest level of education completed by the individual (SSB 2001). NUS2000 differentiate between nine different levels of completed education.

Educational qualifications are measured as a categorical variable. The measure used is similar to the one used in Heath and Cheung (2007*b*) and based in the internationally comparable CASMIN educational schema (e.g., Shavit and Müller 1998). I distinguish between five levels: (1) higher-level tertiary education (i.e., master level education or higher, NUS2000: 7 and 8), (2) lower-level tertiary education (i.e., bachelor level education, NUS2000: 6), (3) higher-level secondary education (i.e., full upper secondary education, NUS2000: 4 and 5), (4) lower-level secondary education (i.e., basic secondary level education and drop-outs from upper secondary education, NUS2000: 3), and (5) primary school education (compulsory minimum level or below, NUS2000: 2). Missing observations (NUS2000: 1, 2, and 9) are censored in analyses where the variable is used.

When included as the main effect, educational qualifications are measured by constructing a set of four dummy variables, where individuals with higher-level secondary education are treated as the reference category. In models in Chapter 6 and Chapter 7, I add interaction terms between the respondents' national ancestry and educational qualifications. Then, I follow the design in Heath and Cheung (Heath and Cheung 2007*b*) and treat educational qualifications as a continuous variable.[33] By treating the variable as continuous I lose some information and make simplifying assumptions (i.e., the interaction effect on education will be equal at all educational levels if the logit parameter estimate is

[32] To differentiate between ethnic groups we would at the *least* need data on language and religion. However, collecting and storing this type of individual-level data is ethically highly problematic and not done in Scandinavian countries (e.g., Jonsson 2007).

[33] Primary school qualifications is given the value -2, lower secondary qualifications the value -1, higher secondary qualification the value 0, lower tertiary qualifications the value 1, and higher tertiary qualifications the value 2. A negative value on the parameter estimate of the interaction term therefore implies lower educational returns for this second-generation immigrant group compared to the native majority.

significant). However, the sample sizes in the second-generation immigrant groups are insufficient for more complex analyses. Furthermore, I gain in parsimony by using one interaction term (rather than four) for each country of origin. This strategy is described in Heath and Cheung (2007*a*).

Parents' income. This variable is the first of two measures of social origin used in the analyses. It measures the economic resources available in the respondent's family of origin during early adolescence. For each parent the mean sum of pension generating income (i.e., *sum penjonsgivende inntekt i 100 kroner* in FD Trygd) in the years when the individuals' were between age 11 and 15 was calculated.[34] This mean sum is reported in Norwegian Kroner (NOK), adjusted for inflation by standardizing it to the NOK value in year 2000. I use information on the mean sum income for both parents; if only one parent is registered with income I only use information from this parent. If I lack information on both parents' income the observation is excluded from the analyses where this variable is used.[35]

I have computed a *relative* measure of parents' income, used in the analyses. To increase comparability between different birth cohorts I have scored parents' income into one thousand quantiles within the parents' income distribution of each birth cohort. This implies that parents' income for individuals born within the same calendar year is compared. One thousand quantiles produces a variable ranging from 1 to 1000, and this variable was then divided by 1000. This means that an individual score of, e.g., 0.600 implies that 60.0 percent of the individuals in this birth cohort had a lower parents' income than the individual in question. The variable is continuous, with a range between minimum 0.000 and maximum 1.000. In order to facilitate a curvilinear effect, a squared version of the variable was computed.

Parents' educational qualifications. This variable is the second measure of social origin used in the analyses. It measures human capital and cultural resources available to the individual's in their families of origin. I use a measure of the highest educational qualifications of the parents of the individuals in our sample at age 16 (i.e., *mor og fars høyeste utdanningsnivå da personen var 16 år* in NUDB). I use information on the parent with the

[34] The original mean mother and father income (11-15 years) variables were constructed by Professor Arne Mastekaasa.
[35] The proportion of individuals with missing information on parents' income among second-generation immigrants (ranging from 0.4 % missing among Norwegian-Indian men and 8.2 % among the Norwegian-Pakistani men) is generally higher than among the native majority (where 0.5 % of the observations are missing). This could produce biased parameter estimates in models where this variable is included.

highest educational attainment. The classification used is NUS2000-codes (SSB 2001). A general problem with regard to the second-generation immigrants' parents is that we are not able to distinguish between educational qualifications acquired in Norway or abroad. Education received abroad is included in the official registers only if an application for approval of the degree has been made; this implies that education from abroad probably is slightly underestimated.

I treat the variable as categorical, and distinguish between three levels: (1) tertiary level education (i.e., BA-level, MA-level, or higher qualifications, NUS2000: 6, 7, and 8), (2) secondary level education (NUS2000: 3, 4, and 5), and (3) primary school level or below (NUS2000: 0, 1, and 2). Unknown parental education is included as a separate category in the analyses (NUS2000: 9 and missing values).[36] In the analyses individuals with parents holding primary school qualifications serve as the reference category.

Control variables

In the analyses we want to isolate the causal impact of the independent variables. To do so I use the control variable method (e.g., Skog 2005:44), by including controls for different factors that may have an impact on access to employment and occupational class attainment.

I use information on the individuals' year of birth to construct the variable *age*, which measures the individuals' age in 2006. In order to facilitate a curvilinear effect I include an *age squared* term in the analyses. The reference category of the variable is set at 30 years. It is important to control for age because individuals often experience intragenerational career mobility throughout the life-cycle. In addition, the group differences in age distribution between the second-generation immigrant groups and the native majority make it important to hold age constant. However note that the cross-sectional design used here is not able to distinguish between age-effects and cohort-effects (see Blau and Duncan (1967:177-188) for a classic discussion).

Both family status and number of children has been shown to have an impact on labor force participation and labor-market outcomes of men and women (e.g., Ribar 2004; Heath and Cheung 2007a, see Petersen, Høgsnes and Penner 2008 for comprehensive

[36] The proportion of parents with unknown education is higher among the second-generation immigrants (ranging between from 7.5 % among Norwegian-Indian women to 17.7 % among Norwegian-Turkish men) than among the native majority (1.0 %). However, models where these observations were excluded yield very similar parameter estimates for the second-generation immigrant groups. In Appendix A, tables showing models of service class attainment from Chapter 5 where these observations can be found.

Norwegian documentation). The variable *family status* measures the marital and cohabitation status of the individuals in 2006 (i.e., using *familietype 1* in FD Trygd). I use a dummy variable to distinguish between two main categories: (1) Married individuals with/without children and individuals cohabiting with a partner *and* at least one common child (coded as 1): (2) all other configurations (coded as 0), such as living alone, living without a partner but with own biological children, and cohabiting without common children. Furthermore, I include the continuous variable *number of children* measuring the individuals number of own biological children below age six in 2006 (from FD Trygd). The range of values runs from minimum 0 to maximum 6. The reference category in the models is individuals without own biological children.

3.3 Statistical methods

Multivariate binary and multinomial logistic regression

The strength of multivariate regression analysis is that it enables us to explore whether – and, to what degree – variation in one or more independent variables can account for variation in the dependent variable (Skog 2005:258-261).[37]

Different multivariate logistic regression analyses of access to employment and occupational class attainment were conducted in this study. This statistical analysis technique is suitable when the values of the dependent variable are categorical and not inherently ordered (i.e., the measurement level is nominal or ordinal). In Chapter 5 and Chapter 6, I estimate binary logistic models (see, e.g., Tufte 2000; Skog 2005) to explore service class attainment and access to employment. In Chapter 7, I estimate multinomial logistic models (see, e.g., Long 1997; Borooah 2002) exploring access to multiple occupational class positions. See Figure 4.1 above, for the coding of the dependent variable in each chapter. All analyses were conducted using SPSS 16.0.

In a situation where the dependent variable is dichotomous the linear regression model is not suitable, because several of the assumptions in the linear regression model is not satisfied (Long 1997:38-39). The most important is the assumption of a linear functional form, where one unit increase in an independent variable always result in a constant

[37] In this sense causation is understood as *statistical associations*, defined as the likelihood of a specific event (Y) happening more frequently if another factor (X) is present than if X is not present. If X is temporally prior to A, the task at hand is to explore whether this association actually is one of *robust dependence* where B is causally significant for Y (either directly or indirectly), after holding of other factors constant (see Skog 2005:28-37). However, statistical association as *robust dependence* does not provide an actual explanation of the phenomenon at hand if we do not at the least provide evidence of the *generative* process or mechanism producing the observed association (e.g., Lieberson 1985; Sørensen 1998; Goldthorpe 2001).

change in the dependent variable, holding all other variables constant. The logistic regression curve has an S-shaped relationship between the independent variables and the probability of an event, to facilitate that the effects of independent variables will have diminishing returns as the predicted probabilities approaches 0 or 1 (Long 1997:40). The formal equation of the logistic model for a single observation unit can be written as

$$\Pr_{(Y_i=1|X_i)} = \frac{1}{e^{-(-\alpha + \beta_1 \cdot X_1 + \ldots + \beta n \cdot X_n)}} + \varepsilon_i \,, \tag{1}$$

where $\Pr_{(Yi=1|Xi)}$ is the predicated probability that the dependent variable $Y_i = 1$, given the value of the independent variables (X_i) included in the model for observation unit i. In equation (1) e denotes the natural logarithm (a mathematical constant approximately equal to 2.71), while β_n is the logit parameter estimate of the independent variable X_n. All other factors that affect the outcome are captured by the error term (ε_i). (Actual models do not report the error term, since they are estimated for all observations in the sample.)

In addition to predicted probabilities the results from a logistic regression analysis can be interpreted as the likelihood (or odds) that unit changes in an independent variable produces a change in the dependent variable. The odds of an event happening (for example that an individual gains access to a specific occupational class position) equals the relationship between the probability of it occurring divided by the probability of it not occurring. This can be written:

$$odds\left(\Pr_{(Y=1|X)}\right) = \frac{\Pr_{(Y=1|X)}}{1 - \Pr_{(Y=1|X)}} = e^{(\alpha + \beta \cdot X)} \tag{2}$$

This function can be re-written as a linear function, by doing a logarithmic transformation. The natural logarithm of the odds yields a linear dependent variable varying between $-\infty$ and ∞. A unit change in the logit estimate of an independent variable tells us of a relative, not an absolute change (Skog 2005:354). We can write this as:

$$\log it\,(Y = 1) = \log \frac{\Pr_{(Y=1|X)}}{1 - \Pr_{(Y=1|X)}} = \alpha + \beta \cdot X \tag{3}$$

Equation (3) is analogous to the formal equation of the linear regression model. Similar to linear regression model the α-coefficient, i.e. the models constant, points to the intercept of the Y-axis and the β-coefficient tell us how much the logit (i.e., log odds) increases or decreases with a unit change in X. The effect of a unit change in a logit parameter estimate is relative. Positive coefficients imply higher and negative imply lower predicted probabilities

of $Y = 1|X$ (i.e., $Pr_{(Y=1|X)}$), relative to the reference category described by the intercept α.[38] However, beyond this a substantial interpretation of the logit parameter estimates is not intuitive. In the analyses I report the intercept and the logit parameter estimates of the independent variables in the models. Furthermore, to ease interpretation I calculate the predicted probability of $Y = 1|X$ for specific subpopulations, by selecting combinations of values on the independent variables. I present these predicted probabilities graphically in figures.

The multinomial logistic model (MNLM) is based on the same basic principles as the binary logistic model, and is suited when the dependent variable has more than two unordered outcome values. In many ways it is a simple extension of the binary logistic model and yields closely resembling results. The MNLM can be thought of as a linked set of simultaneously estimated binary models for all possible comparisons among the outcome values on the dependent variable, with the *same* contrast category. However, it uses the data more efficiently and enforces a logical relationship between all logit parameters, since they are estimated simultaneously (Long 1997:149-151). We get a set of regression equations equivalent to *J*–1 outcome values on the dependent variable, where *J* is the total number of outcomes on the dependent variable. In our case, we get four simultaneous binary logistic analyses comparing four occupational class destinations with less skilled nonmanual and manual work (which is the contrast category, see Figure 4.1). The interpretation of the logit parameter estimates is similar to the binary model, but the estimates imply a positive or negative effect on the predicted probability of being in the given destination category compared to the *contrast* category, relative to the reference category given by the intercept.

To ease interpretation, predicted probabilities are calculated for access to service class positions in the multinomial models. To calculate predicted probabilities in the MNLM, I insert the reported logit estimates for the given outcome categories into the following equation (see Long 1997:154):

$$\Pr(Y = m|X) = \frac{e^{(\beta_m \cdot X)}}{1 + \sum_{j=2}^{J} e^{(\beta_j \cdot X)}}, \text{for } m = 2, \ldots, J \qquad (4)$$

[38] By calculating the antilogarithm of β_n we get a measure of the odds ratio of for the independent variable X_n. The odds ratio should be interpreted as how much the likelihood of Y=1|X increase for each unit change in X_n, and can be written $e^{\beta n}$ (see Skog 2005). However, I do not report this measure in the following chapters.

Where $Pr(Y=m|X)$ is the probability of the given outcome category m (e.g., service class positions), given specific value combinations on the independent variables (X) in the overall model. In equation (4), $e^{(\beta_m \cdot X)}$ is the exponential of the sum of the logit parameter estimates of a specific value combination of the independent variables for the given outcome value, while $\sum_{j=2}^{J} e^{(\beta_j \cdot X)}$ is the exponential of the sum of the logit parameter estimates of the same value combinations for all outcome categories in the model, except for the contrast category (i.e., less skilled non-manual and manual work) which is omitted from the model.

Hypothesis testing and goodness of fit

Hypothesis testing in statistical analysis is a deductive method. Given the statistical margin errors of the sample, we want to test a null hypothesis that one or multiple independent variables have no effect on the dependent variable (i.e., $\beta = 0$). Based on a test statistic and its probability distribution we find a critical value. If the test statistic score is above the critical value we discard the null hypothesis, and accept the alternative hypothesis that the independent variable(s) has an effect on the dependent variable. The critical value of a particular test statistic is dependent both on its probability distribution and the level of statistical significance chosen by us (Skog 2005:177).[39] One should not equate statistical significance with substantial significance, since the statistical power of a test statistic generally depends on the sample size. All else equal, the same statistical association can yield statistically significant estimates in a large-N sample and non-significant estimates in a small-N sample (see, e.g., McCloskey and Ziliak 1996; Ziliak and McCloskey 2004). In the analyses we must remember that the ability to find statistical significant effects of variables – especially, in the interaction effects between ancestry and education – depend crucially on the size of the sample for the specific second-generation immigrant group.[40]

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[39] It tells us at what risk we accept discarding a correct null hypothesis (i.e., Type-I-Error). However, we should be aware of the fact that if we use a too strict significance level we might do the opposite mistake, a Type-II-Error of accepting the wrong null hypothesis of no correlation (Ringdal 2001:292; Skog 2005:207-209).

[40] Technically, statistical interaction is found if the effect of an independent variable on the dependent variable differs depending on a third independent variable, called the moderator variable (Jaccard and Turrisi 2003). In the social sciences this is a common phenomena, since the causal mechanisms studied often are highly context dependent (Skog 2005:51). Adding interaction terms between two independent variables is a common strategy to deal with statistical interaction, but it can lead to multicollinearity between these variables. Multicollinearity is a statistical phenomenon in which two or more independent variables in a multiple regression model are highly correlated. In this situation the coefficient estimates may change, especially the standard errors may increase, and affect the statistical significance of the estimates (Skog 2005:286,306). Due to multicollinearity and small second-generation immigrant samples I report $p<0.10$-values, in addition to the regular 0.05-level.

Logistic regression models are estimated using the maximum likelihood (ML) estimation method, instead of the ordinary least squares (OLS) method used in linear regression. Hence, we use different statistical tests for testing hypotheses and improvement in model fit. ML estimation is an iterative numerical method, which yields parameter estimates of a models' independent variables that maximize the likelihood of observing the actual dependent outcomes in the sample (Long 1997:52-61). From the ML method we obtain the log likelihood (–2LL) statistic for estimated models. The –2LL-statistic can be used to determine whether inclusion of independent variables contributes to an improvement in the model fit relative to the degrees of freedoms (*df*), i.e. whether at least one of the (new) independent variables is different from zero. In order to determine this, two versions of the log likelihood ratio test are available (see Long 1997:94-97). First, the LR chi-square test compares the change in –2LL value between a baseline model without any independent variables and the estimated model. I report this test for the multinomial logistic models. Second, the difference of chi-square test can be used by comparing different nested models with the *exact* same sample size. I report this test for the binary logistic models. We find the difference in –2LL between the constrained model ($-2LL_0$) and the unconstrained model ($-2LL_A$), including one or more independent variables compared to the constrained model. In both versions of the test, the model including more independent variable gives a better fit to the data if the –2LL declines, but the crucial question is whether the change is statistically significant. The log likelihood ratio test statistic is asymptotically chi-square distributed, where *df* is given by the difference in number of independent variables between the models (Long 1997:94; Skog 2005:413). If the p-value of the test score is significant, at least one of the (new) independent variables contribute significantly to the explanation of variation in the dependent variable.

Furthermore, I report the Wald test statistic for each individual logit parameter estimate in the models. It is analogous to the t-test in linear OLS regression, but stricter, and tells us whether the estimated parameter of a single independent variable is different from zero compared to the statistical error margins (Skog 2005:374).

In all models I report the Nagelkerke R^2, a measure of model fit improvement between different logistic regression models. This measure tells us whether the fit of a model improves when we include more independent variables. The Nagelkerke R^2 test statistic is based upon the log likelihood function and has a maximum value of 1, and this measure has an interpretation analogous to the regular R^2 in OLS. However, it is wrong to interpret

it as an exact measure of the percentage of explained variation in the model (Skog 2005:419).

4

Descriptive statistics

In Table 4.1, descriptive statistics on mean values and distributions of the data sample used in the following analyses can be found. Since this dataset comprise information on the entire resident population in the second-generation immigrant groups it is important to note that the reported distributions convey the *actual* achieved labor market positions and educational attainments in the second-generation immigrant population.

Inspecting Table 4.1, the reader should pay attention to two main aspects. First, what differences are there between the second-generation immigrants and the native majority reference group? Second, how do the second generation national ancestry groups differ from each other? Due to the amount of detail in the data I only touch upon the most evident patterns of the dependent and the main independent variables in the dataset.[41]

The second-generation immigrant groups differ markedly in the labor market positions they occupy. Overall, a polarized pattern is depicted for both genders. On the one hand, Norwegian-Indian and Norwegian-Vietnamese second-generation immigrant occupy service class positions more-or-less on par with the native majority. On the other hand, Norwegian-Pakistani and Norwegian-Turkish second-generation immigrants gained access to service class positions at marked lower levels than the native majority. Male second-generation immigrants of all ancestries are overrepresented in higher-level routine non-manual work relative to the native majority. Norwegian-Pakistani and Norwegian-Vietnamese women occupy these positions on par with the native majority. Norwegian-

[41] Descriptive statistics on the control variables is also included in Table 5.1. Furthermore, the N% born abroad row refers to the proportion of individuals born abroad within the different second-generation immigrant groups.

Pakistani men are overrepresented in self-employment. All male second-generation immigrant groups except, the Norwegian-Turkish, are underrepresented among skilled manual work and supervisors. Turning to less skilled non-manual and manual work, we see that Norwegian-Pakistani men and Norwegian-Turkish men and women are clearly overrepresented when compared to the native majority. Importantly, we see that all groups of male second-generation immigrants are highly overrepresented in non-employment (i.e., they are outside the labor force) where all groups hover around approximately twice as high proportions relative to the native majority. Furthermore, among Norwegian-Pakistani and Norwegian-Turkish women approximately 2/3 higher proportions of individuals are non-employed compared to native majority women.[42] In summary it must be noted that many of the second-generation immigrant groups have (markedly) higher proportions of individuals still enrolled as active students. It is plausible that many of these individuals will be found in advantaged occupational positions in the service class, once they finish their higher education. Thus, this will have an impact on the overall occupational class attainment distributions among the second-generation immigrants.[43]

If we turn to educational attainment, we also find that the second-generation immigrant groups differ markedly, both compared to the native majority and internally. As for labor market positions, a two-fold pattern is, not surprisingly, depicted for both genders. On the one hand, markedly higher proportions of the Norwegian-Indians and Norwegian-Vietnamese second-generation immigrants hold tertiary level educational qualifications, in particular at the MA-level, compared to the native majority. On the other hand, the proportion of Norwegian-Pakistani and Norwegian-Turkish second-generation immigrants who have attained tertiary level educational qualifications is marked lower than among the native majority. However, it is important to note that the proportion of individuals holding *higher* level tertiary qualification (i.e., MA-degree) is only slightly lower than in the native majority among Norwegian-Pakistani second-generation immigrants of both genders. Both Norwegian-Pakistani and Norwegian-Turkish second-generation immigrants are markedly overrepresented among those who only hold lower-level secondary educational qualifications (including drop-outs) and the social minimum of primary school qualifications. Overall, this pattern is in line with previous research (e.g., Fekjær 2006).

[42] Previous research in Norway have found that immigrant women, in both the first and second generation, leave the labor force throughout the career to a higher degree than native majority women (e.g., Olsen 2006; Brekke and Mastekaasa 2008; Olsen 2008).

[43] Since active students are censored in the analyses, the relative occupational destination distributions used in the analyses will be biased. However, since second-generation immigrants are overrepresented in higher education there is reason to believe that the service class attainment outcomes of these groups is negatively biased here, compared to what their eventual destination profiles will be.

Table 4.1: *Descriptive statistics on native majority and second-generation immigrant sample, by national ancestry and gender (N=91,225).*

	Men					Women				
National ancestry	Majority	India	Pakistan	Turkey	Vietnam	Majority	India	Pakistan	Turkey	Vietnam
Respondents' occupational class (%)										
Service class, higher and lower level	31.7	34.4	20.0	13.7	29.5	33.0	39.7	14.3	13.2	26.8
Routine non-manual, higher level	9.3	12.8	13.6	15.7	12.8	18.1	14.2	17.0	14.9	18.2
Self-employed persons	4.3	2.2	7.4	4.1	3.4	1.3	1.7	2.0	0.3	1.6
Supervisors and skilled manual workers	16.2	4.4	4.2	14.7	7.8	3.9	1.3	0.9	4.2	3.7
Less skilled non-manual and manual workers	17.9	9.7	23.1	27.3	9.4	16.6	8.8	16.1	22.6	11.8
Other	4.0	4.0	5.2	2.0	1.6	3.7	5.0	5.3	6.3	4.7
Non-employed persons	7.2	15.4	12.6	16.0	14.1	10.3	9.2	29.9	27.4	12.1
Students	9.2	17.2	14.0	6.5	21.4	12.9	20.1	14.5	11.1	21.1
Respondents' highest educational qualifications (%)										
Higher tertiary qualifications (MA)	9.4	15.4	7.2	1.7	16.4	7.9	22.2	6.3	2.8	17.1
Lower tertiary qualifications (BA)	22.2	25.1	11.7	8.5	24.0	36.4	33.9	15.4	13.2	33.2
Higher secondary qualifications	43.3	32.2	30.0	29.7	36.6	32.5	27.6	32.8	28.1	32.9
Lower secondary qualifications	19.1	15.9	31.6	37.2	17.0	18.7	11.3	28.1	34.0	12.1
Primary school qualifications	5.6	8.4	15.2	18.4	6.0	4.3	3.3	11.7	16.7	4.2
Missing information	0.4	3.1	4.2	4.4	0.0	0.2	1.7	5.6	5.2	0.5
Parents' income										
Mean (Min 0.000 - Max 1.000)	0.512	0.410	0.239	0.300	0.302	0.513	0.444	0.215	0.258	0.286
Variation (Std. Dev.)	0.285	0.286	0.223	0.241	0.250	0.286	0.292	0.212	0.230	0.235
Missing information (% observations)	0.5	0.4	8.2	4.4	5.2	0.5	1.7	7.9	4.5	3.7
Parents' educational qualifications										
Tertiary qualifications, BA-, MA-level or higher	24.9	46.7	18.4	2.0	18.0	24.5	50.6	18.0	5.6	15.3
Full secondary qualifications	57.2	25.6	20.0	7.5	21.4	57.7	16.3	20.6	7.6	23.4
Primary school qualifications, full or less	16.8	18.9	45.4	72.7	50.9	16.8	25.5	49.4	70.8	53.7
No educational qualifications registered	1.1	8.8	16.2	17.7	9.7	1.0	7.5	12.0	16.0	7.6
Respondent age (Min 26 - Max 41)										
Mean	33.9	30.2	29.9	30.2	29.0	34.0	30.1	29.7	29.8	29.0
Variation (Std. Dev.)	4.5	3.5	3.3	3.4	2.5	4.5	3.5	3.2	3.2	2.6
Family status (%)										
Married w/w-out or cohabiting w/ mutual children	55.9	72.7	69.9	72.0	55.6	61.0	73.2	74.7	77.4	54.2
All other	44.1	27.3	30.1	28.0	44.4	39.0	26.8	25.3	22.6	45.8
Number of children (Min 0 - Max 6)										
Mean	0.4	0.4	0.6	0.6	0.2	0.6	0.5	0.8	0.7	0.5
Variation (Std. Dev.)	0.7	0.6	0.8	0.7	0.6	0.7	0.7	0.9	0.8	0.7
N % born abroad	-	41.0	38.9	59.0	85.9	-	42.7	38.2	60.1	85.5
N Individuals	44,609	227	1,318	293	383	42,316	239	1,172	288	380

Note: Includes data on the total population of second-generation immigrants born 1965-1980 in selected national ancestry groups. The native majority reference group consists of a random 10 percent sample of each birth cohort in 1965-1980. N % born abroad refers to the percentage of second-generation immigrants, within each national ancestry group, born abroad, but immigrating before age 7.

Looking at ascribed background characteristics of the individuals in Table 4.1 – i.e., parents' income and parents' education – we see a systematic pattern of less advantaged social origins among the second-generation immigrants.

First, in line with previous research (e.g., Østby 2004) we see that all second-generation immigrant groups have lower mean levels of parents' income relative to the native majority. Immigrant parents' are overrepresented in the lower end of the income distribution, and can on average provide less economic and material resources to their child-

ren. The parents' income gap is somewhat smaller in the Norwegian-Indian group compared to the Norwegian-Turkish and Norwegian-Vietnamese, while it is largest among the Norwegian-Pakistani parents.[44]

Second, the immigrant parents in Table 4.1 are underrepresented among those with tertiary and secondary level educational qualifications. This is in line with arguments claiming that immigrants in many cases will be negatively selected on human capital compared to the native majority (e.g., Borjas 1987). However, the Norwegian-Indian group is anomalous, with marked higher proportions of parents with tertiary education compared to the native majority. Norwegian-Vietnamese and Norwegian-Pakistani immigrants, on the other hand, are underrepresented among those with higher education. Norwegian-Turkish immigrants are even more underrepresented, with almost ¾ of the parents holding primary school qualifications. As showed in Table 4.1, it is important to note that the immigrant parents are clearly overrepresented among those with unknown parents' education. A caveat of these data is that we are not able to distinguish between educational qualifications acquired abroad and in Norway. Information on education from abroad is probably underrepresented; since foreign education is only included in the official registers if an application of approval has been made. However, there is some reason to believe that only those with relevant educations have tried to have their education approved. Therefore there is reason to believe that many of those parents registered with unknown education only have educational qualifications at the minimum level.

In summary, Table 4.1 shows that there is heterogeneity in labor-market participation and occupational class attainments between the different second-generation immigrant groups and the native majority. On the one hand, Norwegian-Indian and Norwegian-Vietnamese second-generation immigrants occupy advantaged occupational positions more-or-less on par with the native majority. On the other hand, Norwegian-Pakistani and Norwegian-Turkish second-generation immigrants are underrepresented when compared to the native majority. The multivariate analyses reported in the following chapters will explore to what degree differences in educational attainment and social origin characteristics can account for the overall between-group differences in labor-market participation and occupational attainment reported in Table 4.1.

[44] Note that the proportion of missing observations on parents' income in is higher in the second-generation immigrant groups compared to the native majority. In the analyses these missing observations are excluded.

5

Social origin and service class attainment

Do second-generation immigrants reproduce the social positions of their immigrant parents in adult life or do they experience upward social mobility relative to the native majority?

To assess intergenerational social mobility among second-generation immigrants, I focus on the *crude* measure of their service class attainment relative to native majority individuals with similar social origin. Thus, in this chapter I present results to answer the first research question of this study: *Do second-generation immigrants experience different levels of access to advantaged occupational class positions (i.e., within the service class) compared to native majority individuals of similar social origin?*

In the study of intergenerational mobility we are interested in relative measures of mobility, that is, we want to study how mobility patterns differs between individuals of different social origins (e.g., Breen 2004*a*). This analysis explores whether patterns of (upward) intergenerational social mobility differs between the native majority and the second-generation immigrants. I look at the impact of social origin (measured as parents' income and parents' educational qualifications) upon the likelihood of attaining occupational positions in the service class. The analysis will not lay bare the social mechanisms that are active in the processes we observe the outcome of. In this sense this is a pure 'black-box' analysis, i.e. it only *describes* the observed association between social origin and occupation destination, but does not provide an explanation of it.

5.1 Men

I start by examining the impact of social origin for service class attainment among second-generation immigrant men.

In Table 5.1, I fit four binary logit models where the comparative strategy is to successively add controls for parents' income and parents' educational qualifications. These models are nested equation models, which imply that each successive model is embedded in the former. Furthermore, the sample size in each model is identical, which makes comparison of the model fit, using the log likelihood estimate, between the different models possible. In the models service class outcomes are coded as 1, while all other outcomes are coded as 0, i.e. positive log odds parameters imply higher probabilities of attaining service class positions relative to the reference group of the model. The log likelihood estimates of all models in Table 5.1 shows significant improvements in model fit between each successive model. Hence, our main focus is how the national ancestry parameter estimates change, as I introduce information on social origin. Model 1 introduces information on national ancestry of the second-generation immigrant respondents, in addition to controls for respondent age. The reference group of the model is a native majority respondent at 30 years of age. Model 2 introduces information on parents' income, which is a continuous variable. Model 3 introduces information on parents' educational qualifications, the variable is categorical and the reference group is respondents of parents with primary school qualifications. The national ancestry estimates tell us whether there are significant gaps – and, the size of these – in service class attainment between the second-generation immigrants groups and the native majority, once we hold different ascribed family background characteristics constant.

Model 1 shows the overall relative chances of service class attainment for the second-generation immigrant groups compared to the native majority, adjusting only for between-group differences in age distribution. As documented in the previous chapter (but this time controlled for age) we see that Norwegian-Indian and Norwegian-Vietnamese men have higher probabilities of attaining service class positions than the native majority and that Norwegian-Pakistani and Norwegian-Turkish men have lower probabilities. The negative gap is larger for Norwegian-Turkish men. All estimates are significant.

In Model 2, I introduce information parents' income and parents' income squared. Not surprisingly, we see that there is a positive curvilinear relationship between parents' income and the probability of service class attainment. Adding these variables has a clear impact on the parameter estimates for national ancestry. All the second-generation immi-

grant groups show an improvement in relative chances of service class attainment compared to the native majority. When holding parents' income constant, only Norwegian-Turkish second-generation men experience significant negative attainment gaps relative to the native majority (-0.635, $p<0.001$). Norwegian-Pakistani men do not significantly differ from the native majority, but their parameter estimate is positive (0.068, $p>0.10$). Norwegian-Indian (0.615, $p>0.001$) and Norwegian-Vietnamese (0.720, $p<0.001$) men show clear and significant positive attainment gaps relative to the native majority. The Nagelkerke R^2 estimates in Table 6.1 also show a clear improvement in explanatory power between model Model 1 (0.015) and Model 2 (0.092).

In Model 3, I introduce information on parents' educational qualifications.[45] Together, this information gives us a measure of the respondent's social origin. When holding constant these measures of social origin we get a relative measure of service class attainment – or, a relative measure of upward social mobility among the second-generation immigrant groups compared to the native majority. The parameter estimates of parents' educational qualifications behave as expected, where the probability of service class attainment is significantly higher among those with parents holding tertiary and higher-level secondary educational qualifications compared to the reference group of individuals with parents holding primary school qualifications. The positive curvilinear effect of parents' income is comparable to Model 2. More importantly, an interesting pattern is unfolded in Model 3 when we, in addition to age, hold these two measures of social origin constant. Now, none of the groups of second-generation immigrant men suffer significant negative gaps in service class attainment relative to the native majority. In fact, Norwegian-Indian, Norwegian-Pakistani, and Norwegian-Vietnamese all have significantly higher probabilities of being found in a service class position, once social origin is held constant. The positive attainment gap is markedly larger for Norwegian-Vietnamese men (0.999, $p<0.001$), than for Norwegian-Indian (0.504, $p<0.01$) and Norwegian-Pakistani (0.222, $p<0.05$) men. The parameter estimate for Norwegian-Turkish men is modestly negative, but not significantly different from the native majority (-0.083, $p>0.10$). The introduction of information on social origin has the strongest impact on service class attainment for Norwegian-Turkish men, but the effect is also pronounced for Norwegian-Pakistani and Norwegian-Vietnamese men. Introducing information on social origin does not seem to alter the overall attainment probabilities of service class positions significantly for Norwegian-Indian men. The Nagelkerke R^2 estimates also show a clear improvement in explanatory

[45] In Table A1 in Appendix A, I show similar models where observations with missing parents' educational qualifications are censored. These yield similar results to those shown in Table 5.1.

Table 5.1: *Binary logit models of service class attainment for second-generation immigrants: Men. Logit parameter estimates (contrasts with all other outcomes).*

Model	1	2	3
National ancestry			
Native majority	*ref.*	*ref.*	*ref.*
India	0.405 **	0.615 ***	0.504 **
	(0.150)	(0.155)	(0.158)
Pakistan	-0.385 ***	0.068 ns	0.222 *
	(0.074)	(0.077)	(0.080)
Turkey	-0.958 ***	-0.635 ***	-0.083 ns
	(0.173)	(0.177)	(0.179)
Vietnam	0.325 **	0.720 ***	0.999 ***
		(0.127)	(0.132)
Age/10 (cont 26-41, *ref. = 30 years*)	0.893 ***	0.933 ***	1.046 ***
	(0.050)	(0.052)	(0.053)
$(Age/10)^2$	-0.769 ***	-0.777 ***	-0.737 ***
	(0.057)	(0.059)	(0.060)
Parents' income			
Parents' income (cont 0.000-1.000, *ref.* = 0)		0.777 ***	0.820 ***
		(0.155)	(0.162)
$(Parents' income)^2$		1.012 ***	0.331 *
		(0.146)	(0.153)
Parents' educational qualifcations			
Tertiary qualifiactions, BA- or MA-level			1.419 ***
			(0.040)
Full secondary qualifications			0.663 ***
			(0.034)
Primary school qualifications			*ref.*
No educational qualifications registered			0.303 *
			(0.108)
Intercept	-0.712 ***	-1.496 ***	-2.095 ***
	(0.015)	(0.038)	(0.047)
−2LL (*df*)	53,825.99 (6)	51,401.44 (8)	49,959.43 (11)
−2LL Change (Sig.)	-	2,424.54 ***	1,442.01 ***
Nagelkerke R^2	0.015	0.092	0.135
N	42,052	42,052	42,052

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students and/or with missing family income are excluded.

power between Model 2 (0.092) and Model 3 (0.135). However, it should be noted that the overall explanatory power in Model 3 is not very high.

These results tell us that the net differentials in service class attainment between the native majority and the second-generation immigrants documented in Model 1 are accounted for by between-group differences in social origin. Hence, the overall lower level of service class attainment among Norwegian-Pakistani and Norwegian-Turkish men is due their relatively lower social origins. However, this is not the whole picture; since three of the four second-generation immigrant groups actually experience significant positive

Table 5.2: *Binary logit models of service class attainment for second-generation immigrants: Women. Logit parameter estimates (contrasts with all other outcomes).*

Model	1	2	3
National ancestry			
Native majority	*ref.*	*ref.*	*ref.*
India	0.524 ***	0.677 ***	0.637 ***
	(0.146)	(0.150)	(0.155)
Pakistan	-1.055 ***	-0.637 ***	-0.493 ***
	(0.088)	(0.090)	(0.093)
Turkey	-1.176 ***	-0.817 ***	-0.366 *
	(0.177)	(0.179)	(0.182)
Vietnam	-0.089 ns	0.246 *	0.495 ***
	(0.125)	(0.127)	(0.131)
Age/10 (cont 26-41, *ref. = 30 years*)	0.311 ***	0.344 ***	0.439 ***
	(0.050)	(0.051)	(0.052)
$(Age/10)^2$	-0.367 ***	-0.386 ***	-0.355 ***
	(0.058)	(0.059)	(0.060)
Parents' income			
Parents' income (cont 0.000-1.000, *ref.* = 0)		0.785 ***	0.732 ***
		(0.156)	(0.162)
$(Parents' income)^2$		0.738 ***	0.185 ns
		(0.148)	(0.155)
Parents' educational qualifcations			
Tertiary qualifiactions, BA- or MA-level			1.322 ***
			(0.040)
Full secondary qualifications			0.668 ***
			(0.034)
Primary school qualifications			*ref.*
No educational qualifications registered			0.236 *
			(0.118)
Intercept	-0.481 ***	-1.158 ***	-1.712 ***
	(0.015)	(0.038)	(0.046)
−2LL (*df*)	50,355.32 (6)	48,696.65 (8)	47,535.99 (11)
−2LL Change (Sig.)	-	1,658.67 ***	1,160.66 ***
Nagelkerke R^2	0.011	0.068	0.107
N	38,297	38,297	38,297

ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students and/or with missing family income are excluded.

attainment gaps in service class attainment, compared to the native majority. This implies that second-generation immigrant men in these groups actually experience higher levels of service class attainment compared to their native majority peers with similar social origins. These positive attainment gaps are not accounted for by differences in social origin, but are likely due to higher aspirations and educational attainment among the second-generation immigrants.

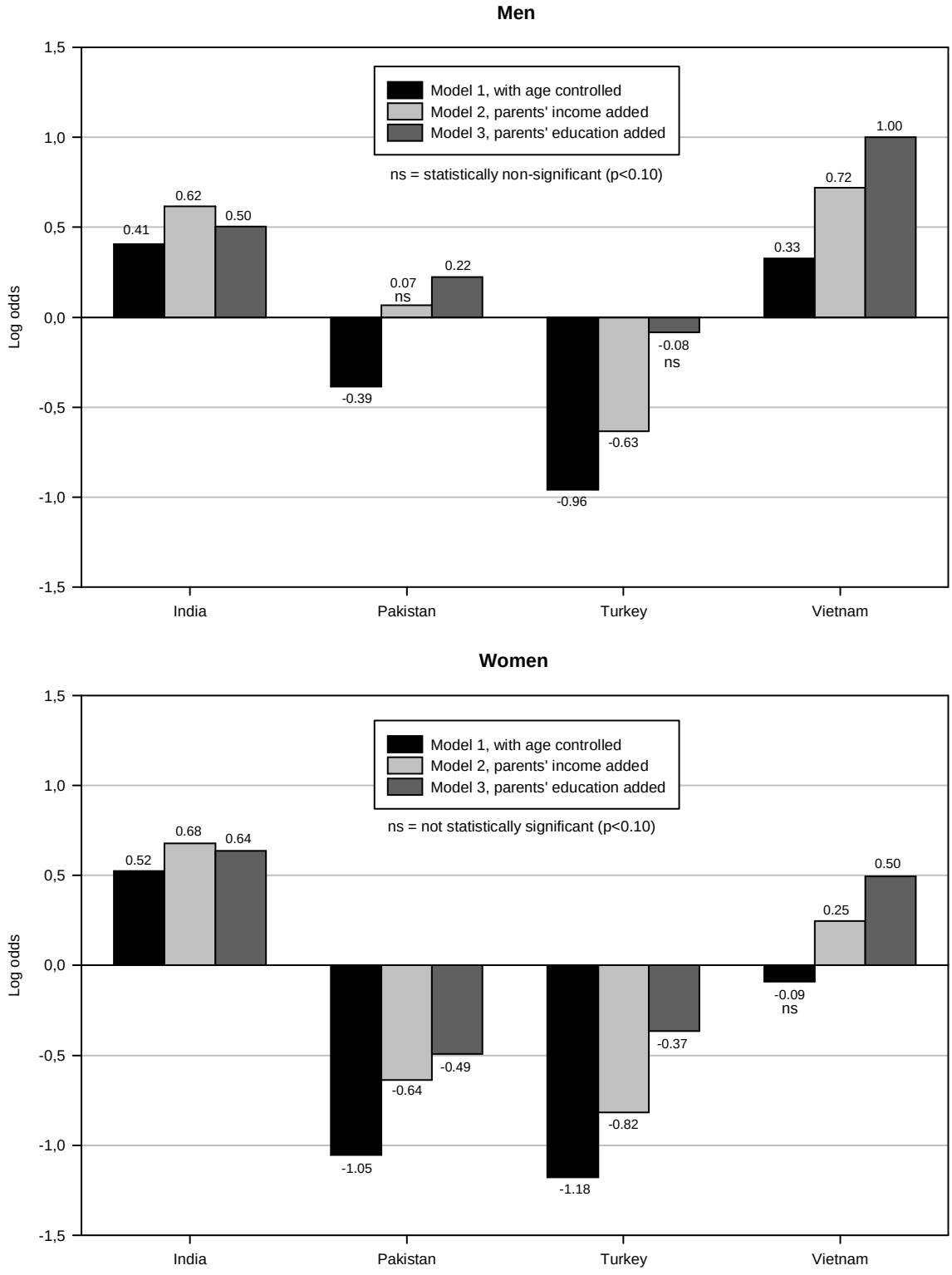

Figure 5.1: *Logit parameter estimates of access to service class positions for second-generation immigrants relative to the native majority: men and women.*

5.2 Women

I now turn to the impact of social origin for service class attainment among second-generation immigrant women.

Table 5.2 present the results of binary logit models for women. These models and their rationale are identical to those presented for men in Table 5.1. From the log likelihood change between Model 1 to 3, we see that the model fit improves in each successive model. Our main focus here is on changes in the parameter estimates for national ancestry, once we introduce information on different measures of social origin.

Model 1 shows the likelihood of occupying positions within the service class for women of second-generation immigrant and native majority background, when we adjust for between-group differences in age. Norwegian-Indian females experience higher probabilities of attaining service class positions compared to the native majority, while Norwegian-Vietnamese women do not differ from the native majority (the small negative estimate (-0.089, $p>0.10$) is not significant). Norwegian-Pakistani and Norwegian-Turkish women experience substantial negative attainment gaps vis-à-vis the native majority women.

Model 2 introduces information on parents' income and parents' income squared. Similar to men, there is a positive curvilinear relationship between parents' income and the probability of service class attainment. When I add these variables to the model, the change in parameter estimates for the national ancestry groups is similar to what we observed for men: All second-generation immigrant groups show an improvement in relative chances of service class attainment compared to the native majority. When holding parents' income constant, the substantial negative attainment gaps remains for Norwegian-Pakistani (-0.637, $p<0.001$) and Norwegian-Turkish (-0.817, $p<0.001$) women, although smaller. The parameter estimate for Norwegian-Vietnamese women is now positive and significant (0.246, $p<0.05$), while the parameter estimate of Norwegian-Indian (0.677, $p<0.001$) women is somewhat higher than in Model 1. From the Nagelkerke R^2 estimate we see that there is a clear improvement in explanatory power between Model 1 (0.011) and Model 2 (0.068), although the overall explanatory power in the model is modest.

In Model 3, I introduce information on parents' educational qualifications.[46] This variable behaves as expected, and similarly to what we found for men. The probability of service class attainment increases when parents' have upper secondary or tertiary education, relative to the reference category of parents' with primary school qualifications. To-

[46] In Table A2 in Appendix A, I show models where observations with missing parents' educational qualifications are censored. These models yield similar results to those shown in Table 5.2.

gether, parents' income and parent's educational qualifications, serve as my measure of social origin. The different national ancestry parameters shows the relative service class attainment chances of second-generation immigrant women compared to the native majority and they reveal a twofold pattern. On the one hand, Norwegian-Indian (0.495, $p<0.001$) and Norwegian-Vietnamese (0.637, $p<0.001$) women experience significant positive gaps in their probability of service class attainment compared to native majority peers of similar social origin: Controlling for social origin has a clear impact of the parameter estimate for Norwegian-Vietnamese women, while the effect of holding social origin constant on the parameter estimate for Norwegian-Indian women is negligible. On the other hand, Norwegian-Pakistani (-0.493, $p<0.001$) and Norwegian-Turkish (-0.366, $p<0.05$) women still experience marked, negative gaps in service class attainment compared to the native majority, even when social origin is held constant. The Nagelkerke R^2 estimates in Table 5.2 show a marked improvement in explanatory power between Model 2 (0.068) and Model 3 (0.107). However, we should note that the overall explanatory power in the model is not very high, i.e. other factors than those included in our model has a significant impact on service class attainment.

5.3 Summary

This chapter has reported results on the effect of social origin on service class attainment for second-generation immigrants relative to the native majority in Norway. Social origin has been measured as family income and parental educational qualifications. Differential levels of service class attainment between ethnic groups, once social origin is held constant, have been interpreted as a relative measure of (upward) intergenerational social mobility within immigrant groups in previous research (see, e.g., Heath and McMahon 2005; Platt 2005*b*).

Figure 5.1 summarizes the results of the analyses presented for second-generation men and women in this chapter. Logit parameter estimates for relative chances of service class attainment for the second-generation immigrant groups compared to the native majority in the different models in Table 5.1 for men and Table 5.2 for women are displayed.[47]

[47] For both men and women, the reference group Model 1 is a native majority individual aged 30 years. In Model 2, family income, a continuous variable, is introduced. The reference category is an individual with the score 0, however, when looking at the logit parameter estimate of for national ancestry the specific value of the reference group in a continuous variable is of no importance. In Model 3, parental educational qualifications are introduced as a set of dummy variables. The reference category is individuals with parents with primary school educational qualifications.

For men, the overall pattern is clear. In this study second-generation immigrant men experience similar or higher chances of attaining occupational positions within the service class, when compared to native majority individuals with similar social origins. Both Norwegian-Indian, Norwegian-Pakistani, and Norwegian-Vietnamese men experience significantly higher probabilities of service class attainment relative to their social origin peers in the native majority. In particular, Norwegian-Vietnamese men have a higher positive gap than the two other groups. Norwegian-Turkish men experience service class attainment on par with the native majority, once between-group differences in social origin are accounted for.

For women, the picture is more complex. The pattern displayed shows that between-group differences in social origin have an important impact on relative rates of service class attainment between second-generation immigrant and native majority women. But Figure 5.1 also show that relative to the native majority the levels of service class attainment between the different second-generation immigrant groups are diverging. On the one hand, both Norwegian-Indian and Norwegian-Vietnamese women experience a significant higher likelihood of occupying service class positions compared to women of the native majority with similar social origin. Norwegian-Indian women actually experience a positive attainment gap even before taking account of differences in social origin. On the other hand, Norwegian-Pakistani and Norwegian-Turkish women are less likely to occupy positions in the service class than native majority individuals of similar social origins. These negative gaps are relatively small, but statistically significant. However, the discrepancy in service class attainment between second-generation immigrant men and women in the Norwegian-Pakistani and the Norwegian-Turkish group is interesting, since Table 4.1 showed that both genders in these groups had comparable educational profiles. An important question is whether differences in upward social mobility is explained by lower educational attainment among women in these groups – or, whether it is explained by higher rates of non-employment and lower utilization of the educational qualifications actually acquired among these women.

In summary, the overall pattern of results in this chapter seem to corroborate previous research on the impact of social origin on educational attainment among second-generation immigrants in Norway (Fekjær 2006; 2007*a*). In the following analyses I focus explicitly in the direct role of educational attainment and social origin in the process of access to gainful employment and occupational class attainment among second-generation immigrants in Norway.

6
Education, social origin, and access to employment

Access to employment is the first barrier in the transition from education to successful labor-market outcomes. Do second-generation immigrants face tougher barriers with respect to accessing gainful employment compared to native majority individuals holding similar qualifications? If so, this could be due to discriminatory treatment from employers or lack of access to job-relevant social networks, but it could also be explained by social origin and more limited resources in the family of origin.

In the analyses in Chapter 5 I established the overall association between social origin and access to advantaged occupational class destinations among second-generation immigrants and the native majority. In this and the next chapter, I introduce information on the individuals' educational qualifications in order to explore the assumed central role of educational attainment in the process of occupational class attainment.

The analysis in this chapter focuses on the direct impact of educational qualifications and social origin on access to employment. This aim of the chapter is to present results answering the second research question of the study: *Do second-generation immigrants experience equal access to employment relative to native majority peers with similar educational qualifications and social origins?*

The results reported in this chapter and the next are linked, in a two-step analysis. In this analysis I report the probability of being employed, in the next I report the probability of attainment of different occupational class positions for those individuals

who are gainfully employed. The analyses reported in these chapters emulate the design and statistical models presented in Heath and Cheung (2007*b*).[48] As earlier, I performed separate analyses for men and women.

6.1 Men

Table 6.1 reports results on whether second-generation immigrant men differ from the native majority men in their probabilities of being employed. The logit parameter estimates of four binary statistical models are presented. In these models, being employed is coded as 1, which is contrasted to non-employment, coded as 0. Positive logit parameter estimates indicate higher probabilities of being in gainful employment, compared to the reference category of the model.[49] Model 1 in Table 7.1 is a baseline model, where I only introduce information on the respondents' national ancestry, with controls for age, family status, and number of own children below six years. In Model 2, I introduce information on the respondents' educational qualifications. In Model 3, I include interaction terms between national ancestry and educational qualifications.[50] In Model 4, I introduce controls for social origin.

Inspecting the parameter estimates of the models in Table 6.1, we should hold our main focus on the parameter estimates of the national ancestry variables and the educational qualification variables. These tell us whether second-generation immigrants experience similar probabilities of access to employment as native majority individuals. Of special interest is the impact of introducing information on the respondent's educational qualifications and their social origin on the second-generation immigrants' relative access to employment.

Model 1 shows that all groups of second-generation immigrant men experience comparable and marked higher probabilities of being without employment compared to

[48] Both sample delimitations and the computation of the dependent and independent variables are replicated, making the results reported in this chapter and the next comparable to those reported for other Western European countries in that volume. However, instead of reporting probabilities of access to employment the authors in that volume report probabilities of avoiding unemployment, which is a narrower and more precise measurement of economic exclusion than our measure of access to employment.
[49] The outcome value 'employed' includes all outcome categories except the 'non-employed'-category on the original occupational class position variable (see Table 3.1 in Chapter 3).
[50] To simplify the analyses the educational qualifications of the respondents are treated as a continuous variable in the interaction term, as discussed in Chapter 3. These models probe whether the second-generation immigrant respondents experience differential returns to their educational qualifications than the native majority does with respect to avoidance of economic non-activity and occupational class attainment.

native majority individuals.[51] There is a weak curvilinear effect of age on the probability of being employed, where the probability of being employed, somewhat surprisingly, gradually decrease with age. The probability of being employed is higher among those who are married or cohabiting with common children, and it increases with number of own children.

Model 2 tell us that all four groups of second-generation immigrant men have a lower probability of being employed than the native majority, even after introducing information on their educational qualifications. If we compare across the four second-generation groups we see that Norwegian-Indian and Norwegian-Vietnamese men have a relative lower probability of being employed than those of Norwegian-Pakistani and Norwegian-Turkish background. The parameter estimate for Norwegian-Indian men is -1.140 (p<0.001) and for Norwegian-Vietnamese men it is -1.112 (p<0.001). For Norwegian-Pakistani men the estimate is -0.520 (p<0.001) and for Norwegian-Turkish men it is -0.584 (p<0.01). These results testify that second-generation men of all four national backgrounds experience a substantial gap in their probability of being employed. Introducing information on educational qualifications only improves the relative access to employment for Norwegian-Pakistani and Norwegian-Turkish men; which makes sense since these groups have lower educational attainment levels than the native majority. Model 2 also documents that persons with primary and lower secondary educational qualifications face markedly higher risks of being without employment, compared to the reference group of persons with higher secondary educational qualifications. The risk of being without employment is significantly lower for persons holding higher- or lower-level tertiary educational qualifications.

In Model 3, I introduce interaction terms between national ancestry and educational qualifications. Compared to Model 2 the log likelihood ratio test shows that the inclusion of interaction terms in Model 3 does not improve the model fit. This can also be seen in the change in the parameter estimates, which are limited. It is only the interaction term for Norwegian-Pakistani men that is significant. These results tell us that the risk of being without employment does not differ for respondents holding different types of educational qualifications within the groups of second-generation immigrant men. Instead, it seems that male second-generation immigrants face the same relative risks of not being employed at all educational levels, when compared to the native majority. However, it must be noted

[51] The reference category in both models is an unmarried 30 years old native majority male without own children below 6 years.

that lack of significance for the interaction terms could be due to the small sample size in the second-generation immigrant groups.[52]

Model 4 introduces information on social origin for the respondents. Social origin is measured as family income and parental educational qualifications. Overall, the impact of social origin, net of differences in educational qualifications, on access to employment is relatively small for the second-generation immigrant groups. There is a small decline in logit parameter estimates for all groups, but this does not change the general trend of disadvantage. Social origin is therefore not an important confounding factor affecting access to gainful employment among second-generation immigrant men, when they are compared to native majority individuals with the same level of educational qualifications.

Figure 6.1 summarize the patterns reported in Table 6.1.[53] On the one hand, it is clear that between-group differences in educational qualifications are important for access to employment among Norwegian-Pakistani and Norwegian-Turkish men. The parameter estimates for being employed relative to the native majority decline significantly for these groups when we include controls for educational qualifications. Differences in educational qualifications account for approximately half of the negative gaps in logit parameter estimates documented. On the other hand, there is no decline after controlling for educational qualifications for Norwegian-Indian and Norwegian-Vietnamese men. Overall, differences in educational qualifications can explain part of the net disadvantages experienced by Norwegian-Pakistani and Norwegian-Turkish men, but not for Norwegian-Indian and Norwegian-Vietnamese men. Furthermore, Figure 6.1 document that differences in social origin does not explain the disadvantages in access to employment experienced by second-generation immigrant men relative to native majority men with similar educational qualifications.

To ease interpretation of the overall pattern with respect to differences in access to employment, I have computed the predicted probability of being without gainful employ-

[52] For example, the non-significant parameter estimate of the Norwegian-Vietnamese group (-0.178, $p>0.10$) is similar to the significant parameter estimate of the Norwegian-Pakistani group (-0.225, $p<0.05$).

[53] The bars in Figure 6.1 correspond to the log odds parameter estimate for national ancestry in Model 1, Model 2, and Model 4 in Table 6.1. In Model 1, the reference category is a native majority individual 30 years old, unmarried or non-cohabiting with mutual children, and without own children. In Model 2, the reference category is further qualified, now including individuals with higher secondary educational qualifications. In Model 4, I hold family income constant, this is a continuous variable, the reference category is unimportant.

Table 6.1: *Binary logit models of being employed for second-generation immigrants: Men. Logit parameter estimates (contrasts with non-employed).*

Models	1	2	3	4
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	-1.124 ***	-1.140 ***	-1.153 ***	-1.003 ***
	(0.207)	(0.217)	(0.228)	(0.220)
Pakistan	-0.971 ***	-0.520 ***	-0.722 ***	-0.345 **
	(0.095)	(0.099)	(0.128)	(0.107)
Turkey	-1.139 ***	-0.584 **	-0.536 (*)	-0.535 **
	(0.176)	(0.181)	(0.313)	(0.187)
Vietnam	-1.021 ***	-1.112 ***	-1.155 ***	-1.015 ***
	(0.156)	(0.166)	(0.164)	(0.175)
Age/10 (cont 26-41, *ref.* = 30 years)	-0.335 ***	-0.352 ***	-0.351 ***	-0.368 ***
	(0.084)	(0.085)	(0.085)	(0.086)
$(Age/10)^2$	0.141 ns	0.352 ***	0.352 ***	0.363 ***
	(0.098)	(0.101)	(0.101)	(0.102)
Family status	0.754 ***	0.702 ***	0.704 ***	0.678 ***
	(0.045)	(0.046)	(0.046)	(0.047)
Number of children	0.663 ***	0.583 ***	0.579 ***	0.603 ***
	(0.046)	(0.047)	(0.047)	(0.048)
Educational qualifications				
Higher tertiary, MA-level		0.724 ***	0.759 ***	0.855 ***
		(0.117)	(0.119)	(0.120)
Lower tertiary, BA-level		0.207 **	0.215 **	0.270 ***
		(0.068)	(0.068)	(0.070)
Higher secondary		*ref.*	*ref.*	*ref.*
Lower secondary		-1.453 ***	-1.461 ***	-1.448 ***
		(0.046)	(0.046)	(0.046)
Primary		-1.650 ***	-1.675 ***	-1.621 ***
		(0.060)	(0.061)	(0.061)
Education x India			-0.027 ns	
			(0.187)	
Education x Pakistan			-0.225 *	
			(0.099)	
Education x Turkey			0.039 ns	
			(0.237)	
Education x Vietnam			-0.178 ns	
			(0.141)	
Parents' income				
Parents' income				1.973 ***
				(0.255)
$(Parents' income)^2$				-1.661 ***
				(0.261)
Parents' educational qualifications				
Tertiary qualifications (BA- and MA-level)				-0.298 ***
				(0.067)
Full secondary qualifications				0.070 ns
				(0.048)
Primary school qualifications				*ref.*
No educ. qual. registered				-0.080 ns
				(0.128)
Intercept	2.026 ***	2.563 ***	2.568 ***	2.162 ***
	(0.028)	(0.041)	(0.041)	(0.071)
−2LL (*df*)	22,405.76 (8)	20,481.97 (12)	20,475.73 (16)	20027.05 (17)
−2LL Change (Sig.)	-	3254.22 ***	6.24 ns	-
Nagelkerke R^2	0.072	0.173	0.173	0.179
N	42,163	42,163	42,163	41,843

ns p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students and/or with missing educational qualifications are excluded in all models. In Model 4 respondents with missing family income are excluded.

Table 6.2: *Binary logit models of being employed for second-generation immigrants: Women. Logit parameter estimates (contrasts with non-employed).*

Models	1	2	3	4
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	-0.077 ^{ns}	-0.249 ^{ns}	-0.251 ^{ns}	-0.132 ^{ns}
	(0.239)	(0.248)	(0.249)	(0.250)
Pakistan	-1.508 ***	-1.072 ***	-1.158 ***	-0.865 ***
	(0.074)	(0.079)	(0.089)	(0.085)
Turkey	-1.356 ***	-0.766 ***	-0.761 ***	-0.641 ***
	(0.145)	(0.152)	(0.212)	(0.158)
Vietnam	-0.401 *	-0.469 *	-0.484 **	-0.274 ^{ns}
	(0.163)	(0.172)	(0.169)	(0.183)
Age/10 (cont 26-41, *ref.* = 30 years)	-0.192 **	-0.085 ^{ns}	-0.086 ^{ns}	-0.093 ^{ns}
	(0.074)	(0.076)	(0.076)	(0.077)
$(Age/10)^2$	-0.083 ^{ns}	0.023 ^{ns}	0.025 ^{ns}	0.019 ^{ns}
	(0.086)	(0.089)	(0.089)	(0.090)
Family status	0.671 ***	0.615 ***	0.614 ***	0.607 ***
	(0.037)	(0.037)	(0.037)	(0.038)
Number of children	-0.176 ***	-0.252 ***	-0.254 ***	-0.255 ***
	(0.024)	(0.025)	(0.025)	(0.025)
Educational qualifications				
Higher tertiary, MA-level		0.938 ***	0.959 ***	1.017 ***
		(0.095)	(0.096)	(0.098)
Lower tertiary, BA-level		0.789 ***	0.792 ***	0.812 ***
		(0.050)	(0.050)	(0.051)
Higher secondary		*ref.*	*ref.*	*ref.*
Lower secondary		-1.067 ***	-1.076 ***	-1.043 ***
		(0.040)	(0.040)	(0.040)
Primary		-1.417 ***	-1.440 ***	-1.368 ***
		(0.057)	(0.058)	(0.058)
Education x India			0.005 ^{ns}	
			(0.218)	
Education x Pakistan			-0.147 (*)	
			(0.077)	
Education x Turkey			-0.001 ^{ns}	
			(0.169)	
Education x Vietnam			-0.166 ^{ns}	
			(0.151)	
Parents' income				
Parents' income				1.525 ***
				(0.223)
$(Parents' income)^2$				-1.172 ***
				(0.228)
Parents' educational qualifications				
Tertiary qualifications (BA- and MA-level)				-0.200 **
				(0.059)
Full secondary qualifications				0.095 *
				(0.041)
Primary school qualifications				*ref.*
No educ. qual. registered				-0.091 ^{ns}
				(0.118)
Intercept	1.848 ***	2.006 ***	2.012 ***	1.626 ***
	(0.029)	(0.039)	(0.039)	(0.063)
−2LL (*df*)	28,128.69 (8)	25,650.91 (12)	25,646.31 (16)	25,192.12 (17)
−2LL Change (Sig.)	-	3180.46 ***	4.60 ^{ns}	-
Nagelkerke R^2	0.034	0.151	0.151	0.152
N	38,432	38,432	38,432	38,152

^{ns} p >0.10, (*) p <0.10, * p <0.05, ** p <0.01, *** p <0.001, two-tailed tests. Standard errors are given in brackets. *ref.* : reference category. Note: Respondents registered as students and/or with missing educational qualifications are excluded in all models. In Model 4 respondents with missing family income are excluded.

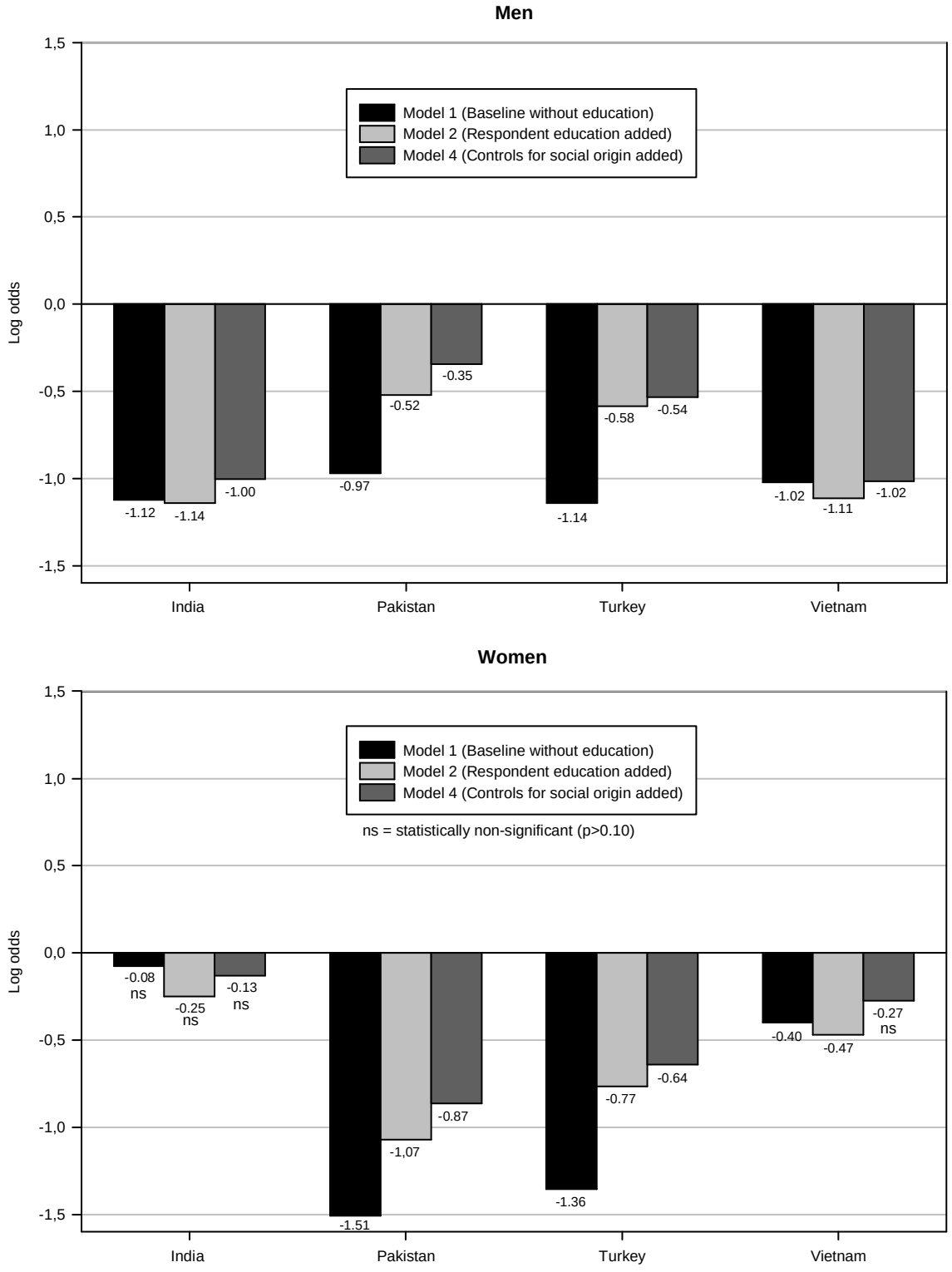

Figure 6.1: *Logit parameter estimates of being employed for second-generation immigrants relative to the native majority: men and women.*

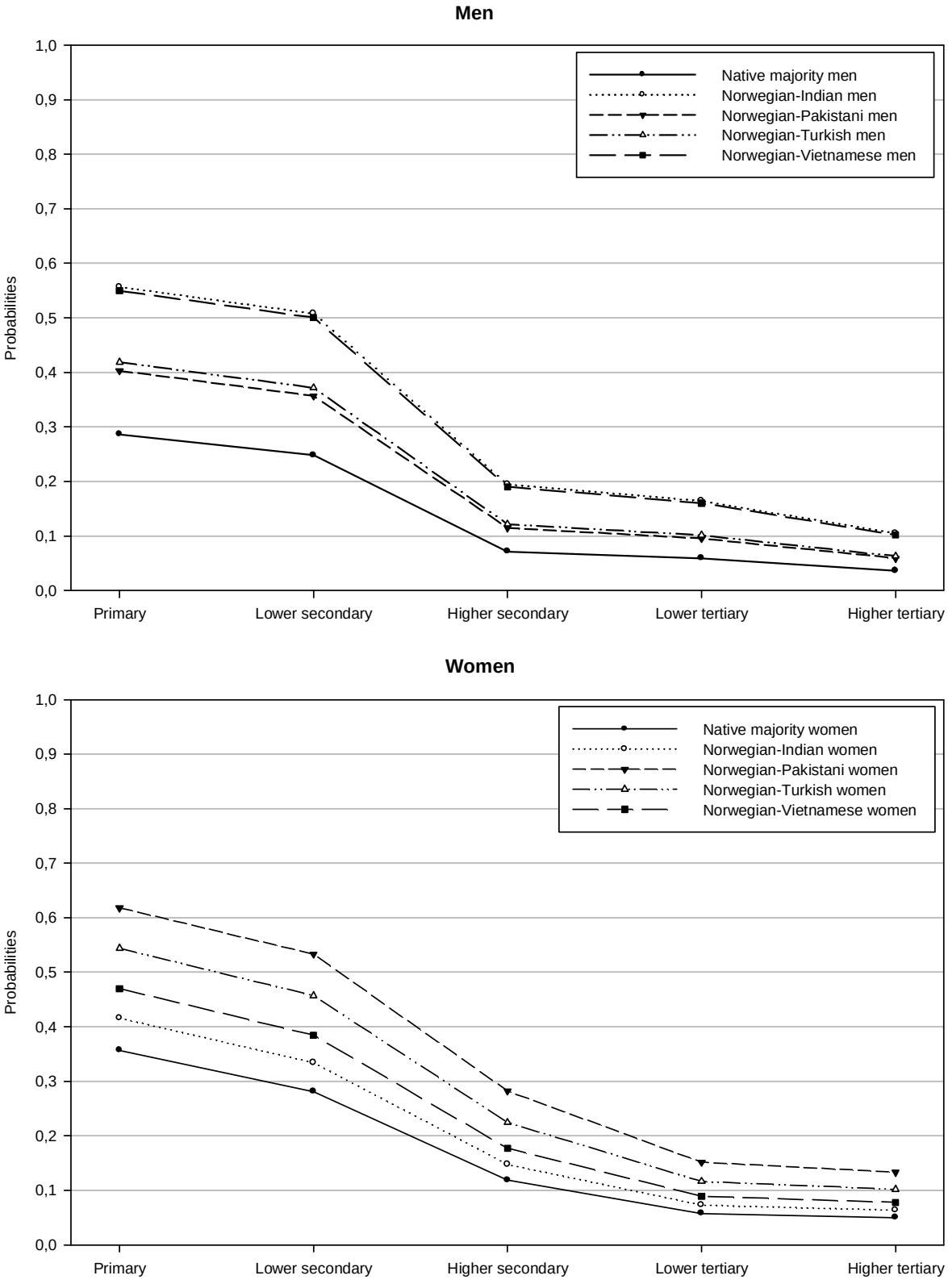

Figure 6.2: *Predicted probabilities of being without employment among native majority and second-generation immigrants, by educational qualification level: men and women.*

ment using the parameter estimates from Model 2 in Table 6.1.[54] Figure 6.2 present predicted probabilities for the native majority and the second-generation immigrant groups at different levels of educational qualifications. We see that Norwegian-Pakistani and Norwegian-Turkish men experience higher probabilities of not being employed than the native majority. Compared to these two groups, Norwegian-Indian and Norwegian-Vietnamese men experience approximately twice as high probabilities of not being employed relative to the native majority. Figure 6.2 shows the strong impact of educational qualifications for access to gainful. Overall, the risk of not being employed is substantially higher for individuals with primary or lower secondary educational qualifications.

6.2 Women

I now turn to the experience of access to employment for second-generation immigrant women. Do they differ from the native majority in similar ways as second-generation immigrant men?

Table 6.2 present the parameter estimates of four binary logistic models. The models are identical to the ones presented for men in Table 6.1. Here, as above, our main focus should be the parameter estimates of the national ancestry variables, as well as the impact of educational qualifications.

Model 1 shows the impact of national ancestry in the baseline model, where I only introduce information on the respondents' national ancestry, with controls for age, family status, and number of own children. Except for Norwegian-Indian women, who are similar to the native majority reference group, all groups of second-generation immigrant women experience lower probabilities of being employed compared to the native majority. Norwegian-Pakistani and Norwegian-Turkish experience more than three times as larger negative gaps in logit parameter estimates compared to Norwegian-Vietnamese women.

Model 2 shows that after introducing information on educational qualifications, the probability of being employed relative to native majority women is still lower for Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese second-generation immigrant women. Norwegian-Pakistani women have the lowest probability of being employed, with a parameter estimate of -1.07 (p<0.001). Norwegian-Turkish women experience a slightly higher probability compared to the Norwegian-Pakistani women, their parameter estimate is -0.77 (p<0.001). Norwegian-Vietnamese women now have higher probabilities

[54] The probabilities are calculated using log odds parameter estimates of Model 2 in Table 7.1. The predicted probability of *not* being employed is found by deducting the probability of being employed from 1.

of being employed, but the negative gap compared to the native majority is still marked and significant (-0.47, $p<0.05$). Norwegian-Indian women do not experience a significant negative gap in access to employment, but the parameter estimate is negative (-0.25, $p>0.10$). These results show that second-generation immigrant women experience substantial disadvantages vis-à-vis the native majority with respect to being in employment, after taking account of between-group differences in educational qualifications. However, there is heterogeneity in outcomes and the pattern for different ancestry groups is opposite to what we observed among second-generation immigrant men. Model 2 also shows that the effect of educational qualifications on access to employment is similar to that found for men. Individuals with primary and lower secondary educational qualifications face much higher risks of being without employment than the reference category of persons holding upper secondary educational qualifications. The probability of being employed among persons with higher- and lower-level tertiary educational qualifications is marked higher than the reference category.

Model 3 introduces interaction terms between national ancestry and educational qualifications. As for men, inclusion of these does not significantly improve the model fit in Model 3 relative to Model 2. The actual change in parameter estimates in the model is also small and none of the interaction terms are significant at the $p<0.05$ level. These data therefore imply that the risk of not being in gainful employment compared to the native majority does not differ systematically with level of educational qualifications for second-generation immigrant women.[55]

In Model 4, I introduce information on social origin, measured, as before, by parents' income and parents' educational qualifications. Overall, inclusion of social origin does not seem to change the overall pattern. All national ancestry parameter estimates show a modest improvement in relative chances of being employed. Furthermore, we should note that the parameter estimate for Norwegian-Vietnamese women no longer is significant (-0.27, $p>0.10$). As for second-generation immigrant men, social origin does not seem to be an important confounding factor for the risk of not being employed, net of differences in educational qualifications.[56]

[55] However, as for men it should be noted that the non-significance of the interaction parameter estimates could be due to the small sample size of the second-generation immigrant groups. But overall the interaction term parameter estimates are relatively small.

[56] Observations with lacking information on family income is excluded from the sample in Model 4, it is therefore not possible to use the log likelihood ratio test investigate improvement in model fit.

Figure 6.1 summarize the empirical patterns documented in Table 6.2.[57] Norwegian-Pakistani and Norwegian-Turkish second-generation women experience significant disadvantages in access to employment, where about one-third of the negative logit parameter estimate gap is accounted for by differences in educational qualifications. Norwegian-Vietnamese women experience a small disadvantage in access to employment. However, after introducing information on social origin the negative gap relative to the native majority is no longer significant. Norwegian-Indian women do not experience significant disadvantages in access to employment, compared to the native majority.

In Figure 6.2, the predicted probabilities of not being employed for different national ancestry groups at different educational qualification levels are displayed.[58] Norwegian-Pakistani women experience the largest risk of not being employed relative to the native majority. The gap experienced by Norwegian-Turkish women is smaller, but marked. Norwegian-Vietnamese women also experience lower probabilities of being employed, but much smaller than those experienced by Norwegian-Pakistani and Norwegian-Turkish women. The difference in predicted probabilities experienced between Norwegian-Indian women and the native majority is not significant. As for men, Figure 6.2 also shows that educational qualifications have an important impact on the probability of not being employed for both native majority and second-generation immigrant individuals. The lower the level of educational qualifications, the higher the probability is of not being employed. Similarly to men, the risk of being without employment is especially pronounced for persons with primary or lower-level secondary educational qualifications.

6.3 Summary

Do second-generation immigrants face disadvantages in access to paid employment relative to the native majority in Norway? The results presented above show that both second-generation immigrant men and women experience higher probabilities of not being in gainful employment relative to native majority individuals, with similar educational qualifications and social origins. Below, I summarize the main results and point to some important questions for the discussion.

Second-generation immigrant men experience marked lower labor-market attachment relative to similarly qualified individuals in the native majority population. After tak-

[57] The bars in Figure 6.1 correspond to the logit parameter estimate for national ancestry in Model 1, Model 2, and Model 4 in Table 6.2. Except for gender, the reference categories are identical to those reported for men in same figure.
[58] To calculate the predicted probabilities I use the logit parameter estimates of Model 2 in Table 7.2.

ing account of between-group differences in educational qualifications and social origin, disadvantages in access to employment seems to be most severe for Norwegian-Indian and Norwegian-Vietnamese men. Norwegian-Pakistani and Norwegian-Turkish men experience smaller disadvantages relative to the native majority, about half the size of what the Norwegian-Indian and Norwegian-Vietnamese men experience. Why do Norwegian-Indian and Norwegian-Vietnamese men experience more severe barriers in access to employment than Norwegian-Pakistani and Norwegian-Turkish men, when their overall educational profiles are more similar to the native majority? The overall patterns of disadvantage among second-generation immigrant men are consistent with both employment discrimination and differential access to job-relevant social networks. But how do these perspectives relate to the heterogeneity between the different national ancestry groups? In the discussion in Chapter 8 I return to these questions.

For women, the pattern is more complex. Compared to men of similar background, Norwegian-Indian and Norwegian-Vietnamese women experience markedly smaller disadvantages. In fact, Norwegian-Indian women do not experience significant disadvantages in access to employment compared to native majority individuals with similar educational qualifications. Furthermore, when we compare Norwegian-Vietnamese women with native majority individuals with similar educational qualifications and social origin they do not experience significant disadvantages. Norwegian-Pakistani and Norwegian-Turkish women, however, experience marked higher disadvantages compared to native majority women. For both groups, the negative gaps are significantly larger than those experienced by men of similar ancestry. Two pertinent questions arise: First, why do Norwegian-Indian and Norwegian-Vietnamese women not experience the disadvantages in access to employment that men of similar national ancestry do? Second, why do Norwegian-Pakistani and Norwegian-Turkish women experience so much larger negative gaps than men of the same backgrounds? I return to these questions in the discussion in Chapter 8.

We have also seen that, social origin, net of educational qualifications, seems to have small and limited effects upon differences in access to employment between second-generation immigrants and the native majority. Only for Norwegian-Vietnamese women does information on social origin make a significant contribution, but the parameter estimate change is small.

Lastly, I want to underline an important caveat of this analysis. The measurement of non-employment used in this study is not optimal.[59] The category is includes unemployed persons, but also self-chosen homemakers, welfare dependents, permanently disabled persons, etc.[60] There is some reason to expect that the proportion of individuals in these categories can vary between the different national ancestry groups. As such, my measure is not a rigorous measure of economic exclusion from the labor market. Nonetheless, there is reason to believe, from the empirical patterns revealed in this chapter, that there are significant differences in labor-market attachment between second-generation immigrants and person with native majority ancestry in Norway. However, it is important to note that the majority of second-generation immigrants are gainfully employed. In the next chapter I scrutinize whether second-generation immigrants experience equal access to advantaged occupational class positions compared to the native majority, once employment is secured.

[59] The category of non-employed individuals includes all individuals that both lack information on occupational status in 2005/2006 and are registered with an annual earnings income below 1.5 BA in 2005. Unfortunately we lack annual earnings information on the respondents for 2006.

[60] Furthermore, the data set I utilize does not include any measure of out-migration. It is possible that second-generation immigrants to a higher degree than individuals with a native majority background decide to emigrate out of Norway in adult life, permanently or for a limited period. Persons living abroad will be intercepted by my measure of non-employment, if they are not registered in work, education, or have income in Norway. Since I use data on the entire second-generation immigrant population of the selected national ancestries it could be that an overrepresentation in out-migration relative to the native majority will cause an upward bias in the level of non-employment in these groups. Whether this is a relevant factor will be an important question to scrutinize for further research.

7

Education, social origin, and occupational class attainment

The majority of second-generation immigrants in Norway are gainfully employed.[61] Does acquisition of formal educational qualifications give them occupational pay-offs comparable to the native majority? In this chapter I present results aimed at answering the third research question of this study: *If employed, do second-generation immigrants experience equal access to different occupational class positions relative to native majority peers with similar levels of educational qualifications and social origins?*

The analysis in this chapter is linked to the previous, yet the sample included in this analysis excludes individuals not found in employment in the previous chapter.[62] This research strategy again emulates the design used in the studies of ethnic minority labor-market disadvantages reported for other Western European countries in Heath and Cheung (2007*b*).

[61] Table 4.1 shows the proportion of non-employed individuals within the different groups. Among men, 7.2% of native majority ancestry, 15.4% of Norwegian-Indian ancestry, 12.6% of Norwegian-Pakistani ancestry, 16.0% of Norwegian-Turkish ancestry, and 14.1% of Norwegian-Indian ancestry are registered as non-employed. Among women, 10.3% of native majority ancestry, 9.2% of Norwegian-Indian ancestry, 29.9% of Norwegian-Pakistani ancestry, 27.4% of Norwegian-Turkish ancestry, and 12.1% of Norwegian-Vietnamese ancestry are registered as non-employed.

[62] In addition, respondents in the 'other' category are also excluded from the sample in this analysis.

7.1 Men

I start by examining the occupational class attainments of second-generation immigrant men. Table 7.1 displays results from a multinomial logit model estimating the probabilities of being found in different occupational class positions, contingent on the respondents' national ancestry and educational qualifications, with controls for age, family status, and number of children. Occupational positions are measured using the five-class version of the EGP class schema (class numbers are given in brackets) presented in Chapter 3. Positions in the service class (I and II), higher level routine non-manual work (IIIa), self-employed persons (IV), and supervisors and skilled manual work (V and VI) are contrasted to positions in less skilled non-manual and manual work (IIIb and VII).[63] Positive logit parameter estimates indicate that the variable contributes to a higher probability of being found in the particular destination class, in contrast to less skilled non-manual and manual work, compared to the reference category. In the multinomial model the reference category is native majority individuals holding higher secondary educational qualifications, who are aged 30 years old, unmarried, and do not have children of their own below six years.

Our main focus in the model is again the parameter estimates for national ancestry. Table 7.1 shows that the second-generation immigrant men do not suffer negative gaps in access to service class positions, compared to native majority individuals with similar educational qualifications. In fact, the significant parameter estimates are for Norwegian-Indian men 0.805 ($p<0.05$) and for Norwegian-Vietnamese men 0.616 ($p<0.05$). Estimates for Norwegian-Pakistani and Norwegian-Turkish men are positive, but not significant. Turning to parameter estimates for the other occupational class destinations, Table 7.1 documents that all groups of second-generation immigrant men experience similar or higher probabilities of being found in positions in higher level routine non-manual work and being self-employed, when we adjust for between-group differences in educational qualifications. Norwegian-Indian and Norwegian-Vietnamese men experience significantly higher probabilities of attaining positions in higher level routine non-manual work than native majority men. Norwegian-Pakistani (0.431, $p<0.05$) and the Norwegian-Vietnamese (0.770, $p<0.05$) men are significantly more likely to be self-employed, compared to similarly qualified native majority individuals. With regard to manual supervisors and skilled manual work, the parameter estimates for all second-generation immigrant groups are nega-

[63] See Table 3.1 for sample delimitation and coding of the different occupational class destinations.

tive. However, it is only Norwegian-Pakistani (-1.277, $p<0.001$) men who experience significantly lower probabilities of being in this category compared to the native majority.[64]

Formal educational qualifications are the most important determinant of access to advantaged occupational positions. In Table 7.1, the educational qualification variables behave as expected, where tertiary level educational qualifications have a very strong effect on the probability of being found in service class positions. The probability of being self-employed or in higher level routine non-manual work is also significantly higher for individuals with tertiary level education, albeit to a much smaller magnitude than in the case of occupational positions within the service class.

I turn to the interaction terms between national ancestry and education, to investigate whether second-generation immigrants experience less pay-off from educational qualifications compared to the native majority. Table 7.1 shows that the interaction terms in most cases are not statistically significant nor have any consistent directions for the different second-generation immigrant groups. However, if we look specifically at the logit interaction terms for access to the service class, the interaction terms for Norwegian-Pakistani (-0.180), Norwegian-Turkish (0.552), and Norwegian-Vietnamese (-0.408) men are significant the $p<0.10$ level, whereas the interaction term for the Norwegian-Indian men is not. This implies that Norwegian-Pakistani and Norwegian-Vietnamese men have slightly lower returns to their educational qualifications, when compared to the native majority, while Norwegian-Turkish men have slightly higher returns. However, if we inspect the predicted probabilities in Figure 7.1 we see that the overall differentials between the native majority and the second-generation immigrant groups are small and negligible.

Looking at the control variables we see a curvilinear relationship between age and the probability of being in service class positions and the petty bourgeoisie, while the impact of age for access to higher level routine non-manual occupations and supervisory and skilled manual work is not significant. Family status has significant positive effects on attainment of all occupational destinations relative to the less skilled non-manual and manual occupations (i.e., the contrast outcome), except for higher level routine non-manual work where the effect is negative. Number of children has a positive impact on being found in all occupational class positions, relative to less skilled non-manual and manual work.

In Figure 7.1, I show the predicted probabilities of access to the service class for the native majority and the second-generation immigrant groups at different educational quali-

[64] However, it is important to note that the non-significance of the parameter estimates might be due to the relatively small sample size in the other national ancestry groups.

fication levels to ease interpretation.[65] Differentials between the native majority and the different second-generation immigrant groups are small. Actually, the probability of being found in service class positions is higher for men of Norwegian-Indian, Norwegian-Turkish, and Norwegian-Vietnamese ancestry than for native majority men. The negative gap in predicted probabilities of service class attainment for Norwegian-Pakistani men relative to the native majority is small and *not* significant. An important conclusion can be drawn from these results: access to advantaged occupational positions for second-generation men is comparable to native majority individuals with similar educational qualifications, once employment is secured.

Figure 7.2 display logit parameter estimates for access to service class positions (contrasted to less skilled non-manual and manual work) for the different second-generation immigrant groups compared to the native majority, taken from different multinomial logistic models for occupational class attainment, found in Appendix B.[66] We see that none of the second-generation immigrant men experience negative differentials compared to the native majority, once we adjust for between-group differences in educational qualifications. The gross negative gaps experienced by Norwegian-Pakistani and Norwegian-Turkish men in the baseline model can be accounted for by differentials in educational attainment relative to the native majority.

Furthermore, Figure 7.2 shows a unidirectional pattern of change in the parameter estimates for the second-generation immigrant groups after inclusion of information on the respondents' social origin. Once social origin is held constant, the probability of attaining service class positions increase for all the national ancestry groups when compared to native majority individuals.[67] For Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese men the change in parameter estimates between the model without and the model with controls for social origin is clear, while the change in parameter estimate is small for Norwegian-Indian men. Notwithstanding the results of general parity in out-

[65] The predicted probabilities of access to service class positions for men reported in Figure 7.1 are based on the parameter estimates in Table 7.1. The predicted probabilities are computed for men at the age of 30 years, unmarried or not cohabiting, and who do not have own children.

[66] The different logit parameter estimates that the graphic bars in Figure 7.2 are taken from can be found in Table B3, Table B4, and Table B5 in Appendix B. The models are described below. The first bar corresponds to the parameter estimates in Table B3 in Appendix B, which is a baseline model, only introducing information on the respondents' national ancestry, as well as controls for age, family status, and number of children. The second bar is taken from Table B4 and is identical to the model displayed in Table 7.1, although without inclusion of interaction terms between national ancestry and education. The third bar is taken from Table B5, which differs by introducing controls for social origin (measured as family income and parental educational qualifications). Since there are some missing observations for the family income variable the sample size of the model in Table B5 is smaller than in Table 7.1, Table B3, and Table B4.

[67] See Table B5 for change in parameter estimates for the other occupational class destinations.

Table 7.1: *Multinomial logit models of occupational class destinations for second-generation immigrants: Men. Logit parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII)).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Petty bourgeoisie (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0.805 *	1.002 **	-0.021 ns	-0.606 ns
	(0.316)	(0.330)	(0.620)	(0.438)
Pakistan	-0.124 ns	0.089 ns	0.431 *	-1.277 ***
	(0.115)	(0.130)	(0.172)	(0.169)
Turkey	0.015 ns	0.548 (*)	0.201 ns	0.059 ns
	(0.285)	(0.287)	(0.476)	(0.278)
Vietnam	0.616 *	0.833 ***	0.770 *	-0.172 ns
	(0.221)	(0.230)	(0.335)	(0.268)
Age/10 (cont 26-41, *ref.* = 30 years)	0.687 ***	0.025 ns	1.163 ***	-0.072 ns
	(0.076)	(0.082)	(0.133)	(0.072)
$(Age/10)^2$	-0.251 **	-0.113 ns	-0.345 *	0.155 (*)
	(0.088)	(0.101)	(0.141)	(0.087)
Family status	0.101 *	-0.114 *	0.135 *	0.113 **
	(0.040)	(0.046)	(0.061)	(0.040)
Number of children	0.130 ***	0.063 (*)	0.114 *	0.059 *
	(0.027)	(0.033)	(0.041)	(0.028)
Educational qualifications				
Higher tertiary, MA level	4.088 ***	1.113 ***	2.163 ***	-0.926 ***
	(0.139)	(0.177)	(0.171)	(0.231)
Lower tertiary, BA level	2.411 ***	1.054 ***	0.465 ***	-1.128 ***
	(0.050)	(0.062)	(0.091)	(0.080)
Higher secondary	*ref.*	*ref.*	*ref.*	*ref.*
Lower secondary	-1.073 ***	-0.135 **	-0.217 ***	-1.146 ***
	(0.044)	(0.044)	(0.060)	(0.041)
Primary	-1.011 ***	-0.223 **	0.182 *	-1.246 ***
	(0.072)	(0.073)	(0.084)	(0.071)
Education x India	0.176 ns	0.116 ns	-0.038 ns	-0.002 ns
	(0.335)	(0.334)	(0.560)	(0.544)
Education x Pakistan	-0.180 (*)	-0.162 ns	-0.249 (*)	0.373 (*)
	(0.106)	(0.116)	(0.136)	(0.221)
Education x Turkey	0.552 (*)	0.299 ns	0.165 ns	0.389 ns
	(0.295)	(0.252)	(0.384)	(0.284)
Education x Vietnam	-0.408 (*)	-0.289 ns	-0.334 ns	-0.440 ns
	(0.240)	(0.252)	(0.324)	(0.353)
Intercept	-0.323 ***	-0.663 ***	-2.005 ***	0.199 ***
	(0.033)	(0.037)	(0.056)	(0.031)
Chi-square (*df*)	16,551.42 (64) ***			
Nagelkerke R^2	0.383			
N	36,877			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications excluded.

Table 7.2: *Multinomial logit models of occupational class destinations for second-generation immigrants: Women. Logit parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII)).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Petty bourgeoisie (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0.813 **	0.331 ns	0.869 ns	-0.669 ns
	(0.294)	(0.288)	(0.644)	(0.624)
Pakistan	0.018 ns	0.043 ns	0.683 *	-1.673 ***
	(0.136)	(0.123)	(0.303)	(0.354)
Turkey	-0.157 ns	-0.186 ns	-0.848 ns	-0.080 ns
	(0.264)	(0.204)	(1.013)	(0.326)
Vietnam	0.115 ns	0.268 ns	0.931 (*)	-0.078 ns
	(0.243)	(0.197)	(0.480)	(0.332)
Age/10 (cont 26-41, *ref.* = 30 years)	0.507 ***	0.121 ns	1.440 ***	-0.409 **
	(0.084)	(0.076)	(0.254)	(0.118)
$(Age/10)^2$	0.006 ns	-0.160 (*)	-0.492 (*)	0.107 ns
	(0.098)	(0.089)	(0.257)	(0.148)
Family status	0.007 ns	0.031 ns	0.319 **	-0.047 ns
	(0.042)	(0.038)	(0.106)	(0.065)
Number of children	0.052 (*)	-0.041 ns	0.063 ns	0.063 ns
	(0.028)	(0.027)	(0.066)	(0.044)
Educational qualifications				
Higher tertiary, MA level	4.410 ***	1.014 ***	2.990 ***	-0.132 ns
	(0.155)	(0.177)	(0.211)	(0.310)
Lower tertiary, BA level	3.003 ***	1.081 ***	0.998 ***	-0.648 ***
	(0.049)	(0.051)	(0.118)	(0.102)
Higher secondary	*ref.*	*ref.*	*ref.*	*ref.*
Lower secondary	-1.259 ***	-0.444 ***	-0.639 ***	-1.330 ***
	(0.054)	(0.039)	(0.115)	(0.075)
Primary	-1.480 ***	-0.461 ***	-0.571 **	-1.476 ***
	(0.110)	(0.069)	(0.202)	(0.154)
Education x India	-0.479 ns	-0.235 ns	-0.121 ns	-0.114 ns
	(0.298)	(0.302)	(0.508)	(0.859)
Education x Pakistan	-0.391 **	-0.182 ns	-0.796 **	0.165 ns
	(0.142)	(0.127)	(0.247)	(0.565)
Education x Turkey	-	-	-	-
Education x Vietnam	-0.561 *	-0.524 *	-0.525 ns	-0.947 *
	(0.242)	(0.222)	(0.401)	(0.427)
Intercept	-0.599 ***	0.073 *	-3.331 ***	-0.878 ***
	(0.041)	(0.037)	(0.114)	(0.056)
Chi-square (*df*)	15,395.15 (64) ***			
Nagelkerke R^2	0.415			
N	31,973			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications excluded. No interaction term for Turkey.

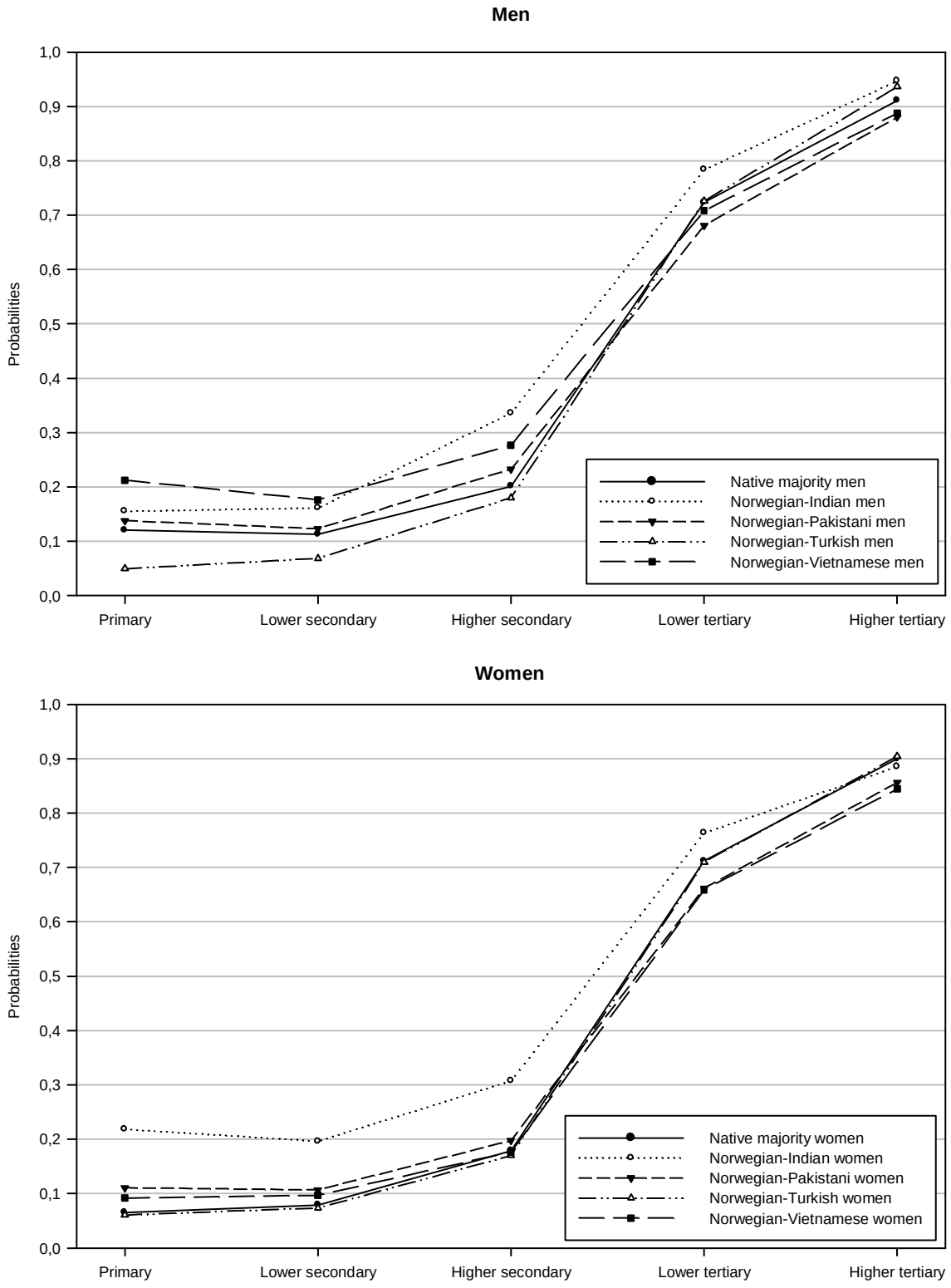

***Figure 7.1**: Predicted probabilities of access to service class positions among native majority and second-generation immigrants, by educational qualification level: men and women.*

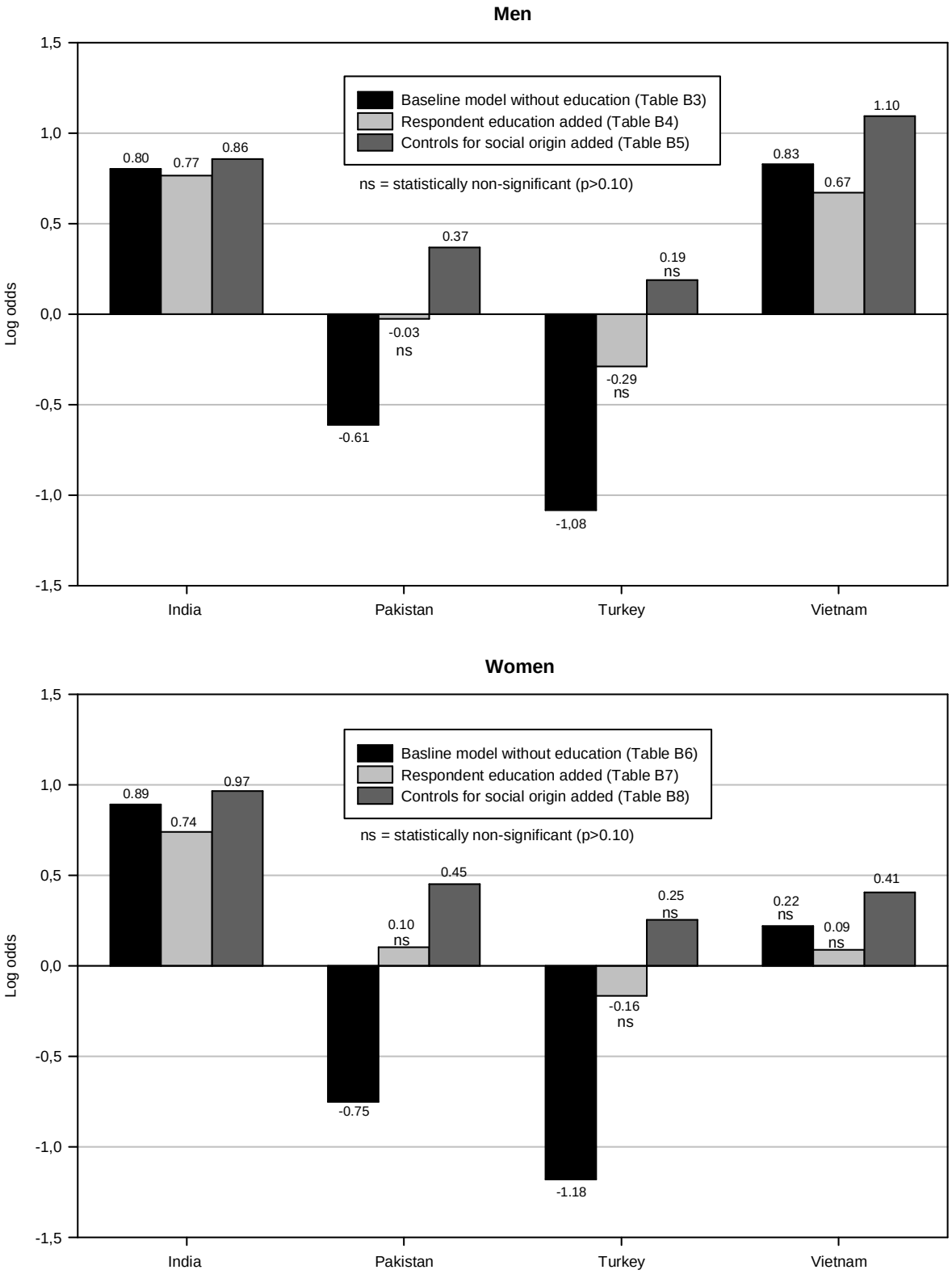

Figure 7.2: *Logit parameter estimates of access to service class positions contrasted to less-skilled non-manual and manual work for second-generation immigrants relative to the native majority: men and women.*

comes documented with respect to equal educational qualifications model in Table 7.1, we see from Figure 7.2 that the second-generation immigrants actually experience higher probabilities of access to service class positions, once we hold both social origin *and* educational qualifications constant. These results support the expectation that that differences in social origin relative to the native majority is a partly confounding factor for second-generation immigrant men's access to positions within the service class, except for Norwegian-Indian men (whose social origin is more similar to the native majority than the other groups). It is, however, important to keep in mind that there overall is no or only negligible gaps between the second-generation immigrants even before we take account of differences in social origin. How can we interpret these results? On the one hand, second-generation immigrants experience an 'advantage' in access to service class positions, relative to equally qualified native majority individuals with similar social origins. This could, for example, be due to higher aspirations or different sorting on educational fields within the same attainment level. On the other hand, these advantages seems to be counter-acted and nullified by 'origin effects', due to the second-generation immigrants on average lower social origins. Holding social origin, in addition to educational qualifications, constant enables us to bracket out these effects.

In conclusion, the occupational class attainment outcomes of second-generation immigrant men are comparable to native majority men, contingent on being gainfully employed and having acquired equal educational qualifications. In addition, when the second-generation immigrants are compared to individuals with similar social origin, many groups actually experience significant positive attainment gaps.

7.2 Women

I now turn to the occupational class attainment of second-generation women. Does the process of allocation into different occupational positions relative to the native majority work in a similar way for them?

Table 7.2 shows the impact of national ancestry and educational qualifications for occupational attainment, with controls for age, family status, and number of children, in a multinomial model for women. The model in Table 7.2 is identical to the one presented for men in Table 7.1. The reference category in the model are native majority women holding higher secondary educational qualifications, who are aged 30 years, are unmarried, and has no children of their own below six years. Our main focus in the models is the parameter estimates of national ancestry and educational qualifications.

I start by inspecting the effect of the national ancestry variables. None of the groups of second-generation immigrant women experience significant negative gaps in access to the service class relative to native majority women, when holding educational qualifications constant. Norwegian-Indian women (0.813, $p<0.01$) experience higher probabilities of being in service class positions compared to native majority women with similar educational qualifications. None of the parameter estimates for the other groups of second-generation immigrant women are significantly different from native majority women. Scrutinizing the estimates for the other occupational class destinations we observe similar patterns to those we observed among second-generation immigrant men, albeit fewer parameter estimates are significant. The parameter estimates of attainment of higher level non-manual routine work and being self-employed for Norwegian-Indian, Norwegian-Pakistani, and Norwegian-Vietnamese women are positive. However, it is only the parameter estimates for self-employment for Norwegian-Pakistani women (0.683, $p<0.05$) and Norwegian-Vietnamese women (0.931, $p<0.10$) that are significantly different from the native majority. The parameter estimates for Norwegian-Turkish women for both destinations are negative, but non-significant ($p>0.10$). Turning to skilled manual work and manual supervisory positions we see that the parameter estimates for all four groups are negative, however only the estimate of for Norwegian-Pakistani women (-1.673, $p<0.001$) is significant. The negative parameter estimates for access to manual work and supervisory positions of the other second-generation groups are relatively small.

Table 7.2 shows that tertiary level educational qualifications have very strong effects upon the probability of service class attainment, for women, as for men. The probability of occupying positions in higher level routine non-manual work and being self-employed is also higher for women holding tertiary level education. However, the effect is smaller than in the case of accessing service class positions. This pattern is similar to what we observed for men, and in correspondence with our expectations.

Turning to the impact of the interaction terms between national ancestry and education, we see that in many cases the parameter estimates are negative. However, in most cases the estimates are relatively small and non-significant.[68] If the parameter estimates are significant this implies that the second-generation immigrant women experience lower returns to their educational qualifications than the native majority. Looking specifically at the logit parameter estimates for service class attainment we see that the estimates for

[68] Because of few observations in the self-employed destination class category for Norwegian-Turkish women I do not include an interaction term for this group. The main effects dummy variable for Norwegian-Turkish women therefore captures the effect that an interaction term would have had.

Norwegian-Pakistani women (-0.391, $p<0.01$) and for Norwegian-Vietnamese women (-0.561, $p<0.05$) are significant. The interaction term estimate for the Norwegian-Indian women is not significant ($p>0.10$).

The pattern of the control variables in Table 7.2 – age, family status, and number of children – is somewhat different from what we observed among men. First, for women family status does not have significant effects on occupying any of the class destinations, except for self-employed positions, relative to less skilled non-manual and manual work. For self-employment, being married or cohabiting increases the probability of being found in these positions. Furthermore, number of children does not have a significant impact on being found in either one of the destination classes. However, the relationship between age and different occupational class destinations for women is similar to what we observed for men.

Figure 7.1 shows the predicted probability of access to service class positions for women, at different educational qualification levels. The gaps between the native majority, Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese women are small and not statistically significant.[69] Norwegian-Indian women are the only group that experiences significant positive attainment gap vis-à-vis the native majority. Overall, there is little evidence for differential access to advantaged occupational class positions within the service class between second-generation immigrant and native majority women with similar educational qualifications.

In Figure 7.2, I show logit parameter estimates of access to service class positions (contrasted to less skilled non-manual and manual work) for different groups of second-generation immigrant women compared to the native majority, from different multinomial logistic models, where the last model includes controls for social origin.[70] The pattern documented is similar to the pattern found for men; once information on educational qualifi-

[69] The predicted probabilities reported in Figure 7.1 have been computed for women at the age of 30 years, who are unmarried (or not cohabiting with mutual children) and who do not have own children below 6 years. The parameter estimate for the Norwegian-Turkish women is not statistically different from the native majority women ($p>0.10$), within the statistical error margins of our sample we have no support for a claim that their predicted probability are different from the native majority.

[70] Below I briefly describe the models, which can be found in Table B6, Table B7, and Table B8 in Appendix B. The first bar corresponds to the logit parameter estimates in Table B6 in Appendix B, which is a baseline model, only introducing information on the respondents' national ancestry, as well as controls for age, family status, and number of children. The second bar is taken from Table B7 in Appendix B and is identical to the model displayed in Table 7.2, although without inclusion of interaction terms between national ancestry and education. The third bar is taken from a Table B8 in Appendix B, which differs only by introducing controls for social origin (measured as parents' income and parents' educational qualifications). Since there are some missing observations for the family income variable the sample size of the model in Table B8 is smaller than the models displayed in Table 7.2, Table B6, and Table B7.

cations is included in the model the differentials in access to positions within the service class disappear. The negative 'gross' gap in service class attainment experienced by Norwegian-Pakistani and Norwegian-Turkish women, is accounted for by between-group differences in educational attainment. Second-generation immigrant women experience similar access to service class positions when compared to native majority women with similar educational qualifications.

Furthermore, social origin seems to have a confounding effect on access to service class positions for second-generation immigrants when they are compared to native majority women with similar educational qualifications. The relatively lower social origins of second-generation immigrant women depress their chances of accessing service class positions relative to the native majority. The impact of including information on social origin is comparable to what we saw for second-generation men. The relative chances of service class attainment increase for all second-generation immigrant groups when we adjust for between-group differences in social origin. The effect is, however, most pronounced for Norwegian-Pakistani women. This gives support for the expectation that second-generation immigrants experience some disadvantages in occupational class attainment due to overall less advantaged social origins. As for men, however, it should be noted that second-generation immigrant women do not suffer disadvantages when I *only* include information on educational qualifications. After inclusion of information social origin, Norwegian-Indian, Norwegian-Pakistani, and Norwegian-Vietnamese women experience *significant* advantages in chances of service class attainment compared to native majority women with similar educational qualifications. Individuals in these national ancestry groups experience higher probabilities of accessing service class positions than native majority women with comparable educational qualifications and social origins.

7.3 Summary

Do second-generation immigrants experience equal access to advantaged occupational class positions and similar return to their educational qualifications, once they secure employment? In this chapter I have presented results on occupational class attainment among second-generation immigrant men and women compared to individuals in the native majority with similar educational qualifications and social origins.

The overall pattern for both second-generation immigrant men and women – of all national ancestries – is one of *equality* in access to advantaged occupational positions in the service class. Except for access to skilled manual work and manual supervisory posi-

tions, second-generation immigrants experience equal – and, in some instances, better – chances of access to the destination classes in the models, contrasted to less skilled non-manual and manual work, when they are compared to native majority individuals with similar educational qualifications. This seems to support what we would expect from human capital perspective, i.e. that equally productive workers are treated equally by employers. Between-group differences in educational attainment among the second-generation immigrant groups and the native majority explains the overall differences in occupational class attainment, when employment is secured.

However, we also saw that second-generation immigrants also actually experience small significant advantages in access to positions within the service class, when I introduced information on social origin. This implies that when second-generation immigrants are compared with native majority individuals with *both* similar social origins *and* educational qualifications they actually experience significantly higher probabilities of being found service class positions. Furthermore, this gives some support for the expectation that second-generation immigrants experience labor market disadvantages due to their overall less advantaged social origins when compared to the native majority.

In Chapter 6 we saw that second-generation immigrants experienced lower probabilities of being found in employment. In this chapter we have seen that once we look at those found in gainful employment and we control for educational qualifications, second-generation immigrants experience equality in access to nice work compared to the native majority. Do these results give support to an assertion that the process by which individuals become allocated to different occupational positions is similar among second-generation immigrants and native majority individuals? I return to this question in the discussion in the next chapter.

8
Discussion and conclusion

The current study has presented the first evidence on occupational attainment among second-generation immigrants in Norway. It is also the first study tracking the intergenerational social mobility of second-generation immigrants into the labor market in Norway. Furthermore, the combined focus on the impact of educational qualifications and social origin for labor-market outcomes among different national ancestry groups of second-generation immigrants is also novel to this study. I have looked at the experience of Norwegian-Indian, Norwegian-Pakistani, Norwegian-Turkish, and Norwegian-Vietnamese second-generation immigrants, born 1965-1980. The general question pursued is whether second-generation immigrants experience equality of opportunity in access to advantaged positions in the social structure when compared to their native majority peers with similar educational qualifications and similar social origins.

In this concluding chapter, I start by summarizing and discussing the results from the empirical analyses in light of theoretical perspectives and previous research. I point to possible explanations of the observed empirical patterns. The key findings are highlighted with respect to contributions of new knowledge, as well as implications for further research and policy. Toward the end, I briefly conclude by addressing whether the social mobility and occupational class attainment experienced by second-generation immigrants is unmaking the vertical mosaic of ethnic stratification in Norwegian society.

8.1 Discussion of results in light of theory and previous research

The results documented in the current study contribute to important insights about central processes behind ethnic stratification among second-generation immigrants in Norway, with special reference to the impact of educational attainment for occupational attainment outcomes.

I have investigated three interrelated phenomena. The first set of analyses explored the impact of social origin on service class attainment for the second-generation immigrants and the native majority. The relative access to advantaged occupational positions was interpreted as a *crude* measure of relative (upward) intergenerational social mobility among second-generation immigrants compared to the native majority. The second set of analyses focused on the impact of educational qualifications and social origin on access to gainful employment, which is the first barrier to successful labor-market outcomes, and how this varied for second-generation immigrants and the native majority. The third set of analyses focused on the impact of educational qualifications and social origin upon access to different occupational class positions for gainfully employed individuals, and, again, how this varied for second-generation immigrants and the native majority.

Table 8.1 summarize the key findings from the empirical analyses and connects them to the research questions of the current study. Firstly, we see that all the second-generation immigrant groups, except Norwegian-Pakistani and Norwegian-Turkish women, experience similar or higher levels of service class attainment as the native majority group, conditional on similar social origins. Secondly, we also see that all second-generation immigrant groups, except Norwegian-Indian and (partly) Norwegian-Vietnamese women, experience negative gaps in access to employment when compared to native majority individuals with similar educational qualifications and social origin. Lastly, once employment is secured, the second-generation immigrants experience similar or better occupational attainment relative to members of the native majority with similar educational qualifications and social origin.

Table 8.1: Summary of research questions and key findings.

Differential or equal outcomes relative to the native majority reference group?	Social origin and service class attainment		Educational qualifications, social origin, and access to employment		Educational qualifications, social origin, and occupational class attainment	
National ancestry	Men	Women	Men	Women	Men	Women
Norwegian-Indian	+	+	**÷**	=	+	+
Norwegian-Pakistani	+	÷	÷	**÷**	(+)	(+)
Norwegian-Turkish	=	÷	÷	**÷**	=	=
Norwegian-Vietnamese	**+**	+	**÷**	(÷)	+	(+)

Note: Marked larger differentials highlighted with larger, bold symbols. Symbols in brackets where negative differentials become non-significant or positive differentials become significant after introduction of information on social origin (access to employment and occupational attainment).

Below I discuss these key findings more thoroughly in light of previous research and theoretical arguments presented. I point to mechanisms that may have brought about the outcomes documented for the second-generation immigrants relative to the native majority. I also discuss some methodological drawbacks in the analyses.

Moving up? Immigrant ancestry, social origin, and service class attainment

The analyses reported in Chapter 5 probed whether second-generation immigrants experienced equal access to advantaged occupational positions in the service class compared to persons in the native majority of similar social origin. This measure of between-group differences in access to the service class, net of social origin differences, has been interpreted as a crude measure of relative intergenerational social mobility differences between ethnic groups in previous studies (e.g., Heath and McMahon 2005; Platt 2005*b*). I measured social origin as parents' income and educational qualifications during the individuals' early adolescence. The analyses reported for men and women were aimed at describing the black-box relationship between social origins and advantaged occupational destinations. The motivation behind the analyses was to follow the intergenerational social mobility among second-generation immigrants into the labor market. Thus it scrutinized whether the signs of social mobility found with respect to educational attainment in previous research (e.g., Fekjær 2006; 2007*a*) also hold with respect to access to advantaged occupational class positions.

Among second-generation immigrant men, all national ancestry groups experienced similar or higher probabilities of being found in service class positions once social origin

was held constant. This implies that between-group differences in social origin can account for the *overall* negative gaps in service class attainment within the second-generation immigrant groups (documented in Table 4.1 in Chapter 4). However, Table 8.1 shows that Norwegian-Indian, Norwegian-Pakistani, and, in particular, Norwegian-Vietnamese men actually experience significantly higher levels of service class attainment than native majority men of similar social origins. These positive attainment gaps are not explained by between-group differences in social origin, these groups actually experience higher levels of upward intergenerational social mobility than members of the native majority.

Among second-generation immigrant women, a bipolar pattern was documented. On the one hand, Table 8.1 shows that second-generation immigrant women of Norwegian-Indian and Norwegian-Vietnamese background experience significantly higher probabilities of service class attainment compared to their native majority peers of similar social origin. These groups experience higher levels of upward intergenerational social mobility compared to native majority women. On the other hand, we also see that second-generation immigrant women of Norwegian-Pakistani and Norwegian-Turkish women experience significantly lower levels of upward intergenerational social mobility compared to women of similar social origin in the native majority.

There is an improvement in the social positions occupied by second-generation immigrants when they are compared to their immigrant parents. The intergenerational progress experienced by the second-generation immigrant groups in focus here has greatly narrowed the gaps in access to privileged occupational positions, compared to the patterns documented for (first-generation) immigrants in previous research (e.g., Birkelund et al. 2008). It is important to note that the proportion of Norwegian-Indian and Norwegian-Vietnamese second-generation immigrants who occupy service class positions is comparable to the native majority even before taking account of differences in social origin (see Figure 4.1 in Chapter 4). Furthermore, the overall gaps in service class attainment experienced by Norwegian-Pakistani and Norwegian-Turkish second-generation immigrants, at least for men, is completely accounted for by between-group differences in social origin.

On the whole, these results corroborate the patterns of educational attainment documented in previous research (Fekjær 2006; 2007*a*). Some departures from these results were documented: Most importantly, a pattern of lower upward social mobility compared to the native majority was documented for Norwegian-Pakistani second-generation women, but not for their male peers. One possible explanation, discussed below, is that Norwegian-Pakistani second-generation women with higher-level educational qualifications have

lower rates of labor force participation than comparable native majority women. In Chapters 6 and 7, I introduced information on formal educational qualifications, to explore the anticipated central role of educational attainment in the process of occupational attainment. These results were linked, in a two-step analysis. First, I compared the likelihood of being gainfully employed between second-generation immigrants and native majority individuals with similar social origins and educational qualifications. Second, I examined whether there was differences in access to different occupational positions, once employment was secured, between second-generation immigrants and native majority individuals with similar educational qualifications and social origins.

Is access to employment the bottleneck for labor-market success?

The empirical pattern found in the analyses in Chapter 6 showed that second-generation immigrants face disadvantages in access to gainful employment compared to native majority individuals holding similar educational qualifications. Moreover, the analyses showed that social origin is not an important factor confounding the ethnic disadvantages in access to employment among second-generation immigrants, when holding educational qualifications contant. Furthermore, a clear educational gradient on the probability of being in employment was documented.

For men, the pattern of disadvantage was clear. All groups of second-generation immigrant men faced significant negative gaps in access to employment compared to native majority individuals with similar educational qualifications and social origins. In particular, the negative gaps faced by Norwegian-Indian and Norwegian-Vietnamese men were marked higher than those found for Norwegian-Pakistani and Norwegian-Turkish men. This is somewhat surprising, since the educational profiles of Norwegian-Indian and Norwegian-Vietnamese are much more similar to the native majority, than other two second-generation immigrant groups.

For women, the between-group patterns documented are less surprising. On the one hand, Norwegian-Indian women are not significantly different from the native majority with respect to the native majority, while Norwegian-Vietnamese women face a small negative gap. On the other hand, Norwegian-Pakistani and Norwegian-Turkish women experience markedly lower likelihoods of being in gainful employment compared to similarly educated members of the native majority population with similar social origins.

From these results, a pertinent question arises: Is access to employment *the* bottleneck for labor-market success among second-generation immigrants in Norway? If so, how can we explain this pattern?

Previous research on access to employment among *second-generation* immigrants in the Norwegian labor market is limited. Some studies document that the general employment level among second-generation immigrants is slightly lower than in native majority, although significantly higher than among (first-generation) immigrants (e.g., Olsen 2006; Daugstad 2007; Olsen 2008). Brekke (2007*b*) found that among candidates with vocational educational qualifications, second-generation immigrants faced only minor disadvantages compared to the native majority in access to full employment in the transition from education to work. Evensen (2008; 2009) found some disadvantages in access to income-generating employment during the first year after graduation among highly educated non-Western second-generation immigrants. However, Drange (2009) only found minor non-significant disadvantages in access to full-time employment among highly educated non-Western second-generation immigrant women. The results in this study are not directly comparable to these studies. However, results document significant negative gaps in access to employment for most national ancestries among the second-generation immigrants, with the exception of Norwegian-Indian women and to some degree Norwegian-Vietnamese women.

Overall, these results are in correspondence with the theoretical expectations extracted from the employment discrimination perspective. Petersen and Saporta (2004) argued that in a legal context where employment discrimination is illegal by law, the ease of discriminatory practices among employers is highest in the process of hiring. Discriminatory hiring practices could be the outcome of taste-based (e.g., Becker 1971), error (e.g., England 1992:60), or statistical discrimination (e.g., Arrow 1972; Phelps 1972; Aigner and Cain 1977). Rigorous documentation of differential access to employment caused by employer discrimination is not possible with our data, since we then would need data on the employer's actions and decisions, as well as on the complete pool of job-applicants. However, it is not unlikely that at least part of the documented disadvantages in access to gainful employment can be explained by disparate treatment employment discrimination.

However, an alternative explanation of differentials in access to employment, in line with the empirical pattern, would be that second-generation immigrants' have less access to job-relevant social networks compared to equally educated peers in the native majority. Lack of access to networks might influence job seekers' knowledge of available job open-

ings, as well as employer's information about job seekers (and possibly also the assessment of similarly qualified job-applicants). Previous research has documented that access to social networks is important for information about job openings in Norwegian labor markets (Hansen 1997). Studies in other contexts have documented that ethnic minorities may face differentials in hiring and access to employment due to lack of relevant social networks (e.g., Holzer 1987; Petersen et al. 2000; Petersen et al. 2005; Fernandez and Fernandez-Mateo 2006).

How can these perspectives account for differences between the particular national ancestry groups?

Among men, the dichotomous pattern, where Norwegian-Indian and Norwegian-Vietnamese men experience significantly higher disadvantages than Norwegian-Pakistani and Norwegian-Turkish men, after holding educational qualifications constant, is unexpected. We would not expect the role of employment discrimination to have a systematically different impact for Norwegian-Pakistani and Norwegian-Indian, and possibly also Norwegian-Turkish, second-generation immigrants. From the viewpoint of employers, it is likely that second-generation immigrants of these ancestries share a similar visible minority status. Although it is plausible that discrimination can explain parts of these disadvantages, it is perhaps more likely that access to job-relevant social networks is a factor contributing to clear differential outcomes between the different national ancestry groups. However, another possible explanation is that these groups, due to differences in educational profiles, compete for work with native majority individuals in different segments of the labor market. In different segments, the hiring process may differ with respect to both the use of informal information channels and employer behavior. However, inclusion of interaction terms in the models in Chapter 6 gave no support for different returns to different levels of educational qualifications between the second-generation immigrants and the native majority. To settle these questions, further research is needed.

For women, the empirical pattern is somewhat less surprising. Norwegian-Pakistani and Norwegian-Pakistani women have higher probabilities of being without employment relative to the native majority reference group. Norwegian-Indian women do not experience significant disadvantages, while Norwegian-Vietnamese women experience a small disadvantage. It is not unlikely that part of the negative gaps experienced by the Norwegian-Pakistani and Norwegian-Turkish groups could be explained by employment discrimination or differential access to job-relevant networks; however, it is also plausible that they could be explained by supply-side factors. In general, women of specific religious and

ethnic backgrounds could differ systematically from the ethnic majority in their work orientation and performance, especially in relation to marriage and child rearing (e.g., Read and Oselin 2008). The negative gaps found for Norwegian-Pakistani and Norwegian-Turkish second-generation immigrant women could be explained by processes of self-selection where the women themselves, or other significant persons in the household, make the decision to withdraw from employment in connection with marriage and child-rearing. Olsen (2008) have shown that married second-generation immigrant women with children have higher propensities of not being in employment. Furthermore, similar patterns have been found among highly educated non-Western immigrant women, in both the first and second generation (e.g., Brekke and Mastekaasa 2008; Drange 2009). However, these studies did not differentiate between countries of origin. It could be that Norwegian-Pakistani and Norwegian-Turkish women are overrepresented among the non-employed, and *drove* the findings in these previous studies. A recent study, exploring family practices and gender equality in immigrated families, found that attitudes and adaptations towards family life diverged both between different immigrant groups and the native majority (Kavli and Nadim 2009).[71] Family patterns and attitudes among immigrants of Vietnamese background were comparable to the native majority, while there was a clear divergence among immigrants with Pakistani background. Discrepancies remained between Norwegian-born individuals with Pakistani-born immigrant parents and native majority individuals, although a clear converging development towards the native majority population was documented (Kavli and Nadim 2009:120-140). This lends some support to the assertion that the larger gaps in access to employment among the Norwegian-Pakistani (and possibly also the Norwegian-Turkish) second-generation women can be explained by differences in preferences toward labor-market participation in these groups. In the end, however, these are only speculations since I am not able to pursue this explanation any further here. Hence, more research is needed.

In conclusion, I would once more like to underline the caveat that the measure of non-employment used in this study is problematic. Non-employment is a wider category than unemployment, which is a more precise measure of economic exclusion. In addition to unemployed persons, the non-employment category includes voluntary home-makers

[71] Among the groups in focus here, only first-generation immigrants with Vietnamese background and first- and second-generation immigrants with Pakistani background were included. The study is based on a combination of survey data, register data, and qualitative interviews. It focuses on first-generation immigrants of Iranian, Iraqi, and Vietnamese national ancestries, and first- and second-generation immigrants of Pakistani national ancestry, as well as native majority individuals.

and other economically inactive persons.[72] This implies that the estimates of economic exclusion in the form of unemployment could be slightly overestimated and upwardly biased.

Nonetheless, the empirical patterns documented indicate that there still exist marked differences in labor-market attachment between second-generation immigrants and the native majority in Norway. Examining differentials between second-generation immigrants and the native majority in access to gainful employment – or, more rigorously, avoidance of unemployment – ought to be a prioritized avenue for future research. The results presented in this study indicate that differential access to gainful employment is *the* bottleneck for labor-market success among second-generation immigrants in Norway.

Equal access to nice work, once gainful employment is secured

Contingent on being gainfully employed and having similar educational qualifications, second-generation immigrants of both genders generally seem to have access to advantaged occupational class positions on par with the native majority. The analyses in Chapter 7 showed that the differences in access to advantaged occupational class positions between equally qualified individuals of second-generation immigrant and native majority background are negligible or non-existent. In some cases, second-generation immigrants actually experience occupational attainment advantages in access compared to the native majority. Overall, the process of allocation into occupational positions seems to work in much the same way for the different second-generation immigrant groups and the native majority.

In more detail, the results show that second-generation immigrant men gain access to advantaged occupational class positions on par with the native majority. Actually, Norwegian-Indian and Norwegian-Vietnamese men are more likely to be found in occupational positions within the service class and higher level routine non-manual work when compared to native majority individuals with similar educational qualifications. For second-generation immigrant women, the overall pattern is similar. Here, only Norwegian-Indian women are significantly more likely to occupy service class positions compared to equally qualified native majority individuals. Norwegian-Pakistani and Norwegian-Vietnamese men and women are significantly overrepresented among the self-employed.

[72] Other economically inactive persons probably include disabled persons not in employment, persons in prison, etc. However, what proportions these make up is unknown. Furthermore, as described in the Chapter 6, the proportion of non-employed persons measured as non-employed could be biased, if the second-generation immigrant groups experience higher levels of out-migration relative to the native majority. To briefly recapitulate, I define non-employed persons without occupational information and annual income below 1.5 BA as non-employed. If people live abroad, these will be registered as non-employed due to my measurement.

With respect to supervisory and skilled manual work, Norwegian-Pakistani men and women are significantly underrepresented compared to the native majority. However, to recapitulate, the general picture is mainly one of similarity in outcomes once gainful employment is secured, not one of diversity and disadvantage. How could this pattern be explained?

The occupational attainment patterns documented in this study can be accounted for by a set of concatenated mechanisms and processes, allowing for multiple possible explanations.

First, it is possible to argue that second-generation immigrants get the same returns to their human capital and formal educational qualifications as individuals in the native majority. Once second-generation immigrants are gainfully employed, the allocative process works in a meritocratic way similarly to the native majority, where occupational class attainment largely is determined by educational qualifications. This corresponds with what we would expect from the human capital and educational signaling theories. However, if we look at the occupational attainment results in combination with those documented for access to employment an alternative explanation is possible: Second-generation immigrants face tougher barriers at the entry into the labor-market, it is therefore not correct to assert that they get the same returns to their human capital as the native majority.

Hence, a second explanation is that different barriers in access to gainful employment work as a selective entrance *filter* to the labor market (e.g., Tesser and Dronkers 2007). Compared to the native majority, the second-generation immigrants who secure gainful employment could thus be positively selected on unmeasured characteristics compared to native majority individuals with similar educational qualifications. Moreover, it is important to note that second-generation immigrants in some cases experience significant advantages in access to privileged occupational positions. In line with the selection process argument, a possible interpretation of these results is that second-generation immigrants survive a more severe selection at the entrance to the labor market. From this selection-argument it is plausible that second-generation immigrants experience positive attainment gaps when compared to the native majority.

Third, an alternative explanation of this same pattern of advantage is the existence of systematic horizontal differences in *field* of educational qualifications within each educational attainment *level*. This explanation is not in conflict with the selection argument; it is possible that both processes could operate simultaneously. Previous research has documented that second-generation immigrants in higher education are enrolled in different types of education than the native majority. Second-generation immigrants are overrepre-

sented in natural sciences, administrative and professional educations (e.g., Henriksen 2006; Schou 2009). These educational fields could disproportionally qualify individuals for advantaged occupational positions within the service class compared to other educational fields. An important question for future research is therefore to scrutinize what impact different educational field of qualifications have for differences in labor-market outcomes between native majority individuals and second-generation immigrants.

Fourth, social origin does matter, although only to a limited degree, for access to advantaged occupational positions among the second-generation immigrants compared to educational qualifications (cf. Figure 7.2 in Chapter 7). The negative social origin effects in attainment of advantaged occupational positions in the service class are shared by individuals in the native majority with similar social origins as the second-generation immigrants. One possible explanation of this pattern is that second-generation immigrants lack access to job-relevant *networks* which are not closed along lines of ethnicity, but along the lines of social *class* origin. Compared to native majority individuals of advantaged social origins, second-generation immigrants of less advantaged social origins might lack access to friends' and parents' job-relevant social networks. Similar direct effects of social origin, net of educational qualifications, have been documented in Norwegian labor markets (e.g., Hansen 2001; Mastekaasa 2004; Hansen 2009).

An interesting pattern was uncovered once I included controls for social origin: Then the majority of the second-generation immigrant groups of both genders actually experienced *significantly* higher probabilities of occupying service class positions compared to native majority individuals with similar educational qualifications and social origins (see Table B5 for men and Table B8 for women in Appendix B). This pattern is very interesting. It could possibly be explained by the two already mentioned mechanisms: (i) tougher selection barriers at the entrance to the labor market, selecting the second-generation immigrants in employment on unmeasured characteristics important for labor-market outcomes or (ii) different selection to educational fields within the same educational attainment level. However, a third mechanism could be operative in that the higher educational aspirations and the immigrant 'drive' documented among second-generation immigrants in previous studies on education could spill over into their labor-market behavior. Second-generation immigrants could have higher *career* aspirations than their native majority peers with similar social origin and educational qualifications. Being more career-oriented than their native majority peers of similar social origin they could strive more actively and persistently to secure access to prestigious occupational positions within the service class. However,

with the data utilized here I am not able to specify what mechanisms produce this pattern of educational advantage among the second-generation immigrants groups.

In conclusion, the analyses in Chapter 7 documented important patterns of equality – and, sometimes advantage – in occupational attainment outcomes when second-generation immigrants are compared to the native majority. For the majority of second-generation immigrants in this study the process of allocation into different occupational class positions works similarly to the native majority, once employment is secured.

The central role of educational attainment in the process of stratification

If we look at the access to employment and occupational class attainment results together, the central role of educational attainment in the process of stratification becomes conspicuous. The results reported in Figure 6.2 in Chapter 6 and Figure 7.1 in Chapter 7 graphically depicts the strong positive gradient effect of educational qualifications on the probability of gaining access to employment and gaining access to service class positions, contingent on being employed. This shows that attainment of higher-level educational qualifications is the most important individual-level mechanism mediating social mobility and successful occupational attainments among *both* second-generation immigrants and the native majority. Hence – to paraphrase Gambetta (1987) – educational attainment is an efficient mobility strategy that second-generation immigrants can employ in order to escape the forces of social reproduction and the occupational destinations that their ascribed social origin would predict.

However, second-generation immigrants *do* experience lower probabilities of being employed compared to native majority individuals with similar educational qualifications and social origins. But acquisition of higher-level educational qualifications is still the central determinant of successful labor-market outcomes, and, once employment is secured, occupational gaps between second-generation immigrants and the native majority are negligible or non-existent. Thus the key processes reproducing ethnic disadvantage precede entry into the labor market. To the extent that ethnic stratification is reproduced between generations in the immigrant population this *primarily* happens within the educational system, although there are some barriers in access to employment. The main hurdle with regard to parity in *overall* occupational class destinations seems to be that many groups of second-generation immigrants have lower educational attainments (i.e., the OE-link in the OED triangle) compared to the native majority, before we take account of differences in social origin. To further alleviate the remaining overall patterns of ethnic stratification

found primarily within the Norwegian-Pakistani and Norwegian-Turkish second-generation immigrant populations the main focus should be on disparities within the educational system.

Key findings in comparative perspective

In addition to patterns of social mobility and the importance of education, the key finding in this study is that second-generation immigrants in Norway seems to primarily face ethnic disadvantages in access to employment. Second-generation immigrants experience *similar* patterns of occupational class attainment with the native majority, once similar educational qualifications and access to employment is secured.

This key finding is interesting in a broader comparative perspective. To recapitulate, the current study emulated the analytical strategy employed in the studies of labor-market experiences among ethnic minorities in other Western European countries reported in Heath and Cheung (2007*b*). In the country-level studies in that volume, the focus was on avoidance of unemployment and occupational class attainment. Hence, it is possible to situate my key findings in a comparative perspective by comparing the results of the current study with those found for the other countries. However, the measure of non-employment used here is wider and not directly comparable to the measure of unemployment used in those analyses.

Overall, the empirical pattern of labor-market outcomes here is comparable to those found for Sweden and Britain (see Cheung and Heath 2007; Jonsson 2007).[73] In these countries second-generation immigrants of non-European national ancestry primarily face barriers with respect to avoidance of unemployment, but overall similarity in occupational outcomes compared to the native majority. The patterns of ethnic disadvantage in Sweden and Britain are comparable to those found in the classic immigration countries of Australia, Canada, and the USA (Heath 2007:662-661). Furthermore, comparable patterns of ethnic disadvantage in avoidance of unemployment, but equality in labor-market outcomes once similar education and employment is secured, has also been documented for many second-generation immigrant groups of non-European ancestry in the Netherlands (e.g., van Ours and Veenman 2004; Tesser and Dronkers 2007). In other European countries, such as Austria (e.g., Kogan 2007), Belgium (e.g., Phalet 2007), France (e.g.,

[73] It must be noted that the measure of labor-force participation used in the Swedish study is not unemployment, but rather non-employment (see Jonsson 2007:468). As such, the measurement based in missing occupational information and income thresholds used here is comparable to that utilized in the Swedish case.

Silberman and Fournier 2007), and Germany (e.g., Kalter and Granato 2007), substantial ethnic disadvantages in occupational class attainment was also found among gainfully employed second-generation immigrants of non-European countries.

Although one should be cautious about drawing firm conclusions, it is interesting to note that the overall labor-market disadvantages among second-generation immigrants in Norway seem to be among the smallest in a comparative European perspective, once differences in educational qualifications are taken account of. It is beyond the scope of this study to explain this pattern, but recent studies have shown that Norwegian society is relatively 'open', with high levels of social fluidity in a comparative perspective (e.g., Breen 2004c; Ringdal 2004) and one could speculate whether this also could be part of the explanation of low levels of ethnic labor-market disadvantage in Norway. If so, the comparability with Sweden is perhaps not very surprising, since Sweden also shows high levels of social fluidity in a comparative perspective (e.g., Breen 2004c; Jonsson 2004). Both countries also share important macro-structural characteristics, most importantly the Nordic social-democratic welfare state model with egalitarian social policies (e.g., Esping-Andersen 1990; 1999). On the other hand, the similarity with Britain is more puzzling, with its colonial Commonwealth history, decisively larger immigrant population, and different welfare policies and labor-market institutions. Perhaps this similarity only underlines the complexity of factors behind the economic incorporation of (second-generation) immigrants across different national contexts (see, e.g., van Tubergen et al. 2004; Heath 2007; Heath et al. 2008).

8.2 Policy implications

This research has shed light on important aspects of intergenerational social mobility and occupational class attainment of second-generation immigrants in Norway. I have documented optimistic signs of upward mobility among many of second generation groups, and overall parity in access occupational positions, once equal educational qualifications and employment is secured. However, significant gaps in access to gainful employment still exist.

But what can be done to bridge the overall occupational class attainment gaps? To achieve progress I want to point to two domains that policy makers should focus on.

First, my results have shown that there seems to be a tougher barrier with respect to access to employment among second-generation immigrants. Based in my data, I can only speculate whether this barrier is caused by disparate treatment discrimination by employers

or whether second-generation immigrants have less access to job-relevant networks. It could also be that part of the employment gap experienced by second-generation immigrants, at least women of Norwegian-Pakistani and Norwegian-Turkish background, arise through self-selection and deliberate choices to stay outside the labor force. If these second-generation immigrant women want to stay at home, and have deviating preferences compared to the native majority, then the scope of actions that policy makers can utilize is limited. However, to the extent that this employment gap is due to hiring discrimination, strengthened legislation and increased vigilance in regulating employer's action is needed. However, in order to pin-point more effective remedies it is important to gather more rigorous evidence on employers hiring practices and potentially discriminatory actions. This implies experimental audit studies probing employer's potentially discriminatory hiring practices in different segments of the labor market.

Second, this research has shown that educational attainment, not surprisingly, is the main mediating factor in the process of upward social mobility among second-generation immigrants in Norway. Apart from the gaps in access to employment, I have shown that the overall gaps in occupation class attainment between the second-generation immigrants and the native majority can be explained by differences in educational qualifications. As argued above, attainment of upper secondary and tertiary-level educational qualification plays a central role for successful-labor market outcomes among both second-generation immigrants and the native majority. A central goal for policymakers must therefore be to take actions to limit the proportion of second-generation immigrants that do not finish upper secondary school. Previous research has shown that if second-generation immigrants complete upper secondary education, they are just as likely, or, in some cases, more likely, to continue into higher education (Fekjær 2006). Hence, alleviating the gap in secondary school drop-outs between second-generation immigrants and the native majority is therefore central to bridge the overall gap in labor-market outcomes between the second-generation immigrant groups and the native majority. Insofar that ethnic stratification is reproduced across generations in Norway, this happens *primarily* within the educational system. The main thrust in actions to enhance upward intergenerational social mobility among second-generation immigrants should therefore focus on continuation rates and completion of secondary level schooling. What remedies that could be effective is a question that research focusing on educational outcomes specifically should address.

8.3 Questions for future research

I now turn to implications that the findings in this study has for future research. First of all, future research should differentiate within the second-generation immigrant population based on national ancestry. The compositional complexity within the second-generation population warrants the use of the most sophisticated and nuanced measures available. Less disaggregated measures might conceal heterogeneous patterns of outcome within the second-generation immigrant population. This study has also shown the importance of exploring the impact of social origin on labor-market outcomes among second-generation immigrants.

Second, this study documents that access to employment seems to be the central bottleneck for equal opportunities in labor-market outcomes for second-generation immigrants in Norway. However, as stressed my measure of non-employment is not optimal. A central task for future research is to explore whether second-generation immigrants face higher risks of being *unemployed*. Furthermore, one could employ experimental audit studies that directly probe employers' potential disparate treatment discrimination in different segments of the labor market. Although ethically problematic, audit studies can ascertain to what degree differential labor-market outcomes among second-generation immigrants are due to differential treatment by employers or other factors, such as lack of access to networks and preference heterogeneity. Furthermore, it is important to explore to what degree the disadvantages faced by second-generation immigrant women of Norwegian-Pakistani and Norwegian-Turkish women can be accounted for by supply-side explanations, such as a higher propensity of leaving the labor market in connection with marriage and child rearing.

Third, exploring whether systematic differences in selection to educational fields, within the same educational qualification level, have an impact on between-group differences in labor-market outcomes is important (e.g., Kalmijn and Lippe 1997). Horizontal differences in educational field of qualifications could account for the (small) differences in occupational attainment between the second-generation immigrants and the native majority when I held educational level of qualifications constant. For example, a systematic over-representation in some fields (such as professional educations) could produce labor-market advantages for second-generation immigrants.

Four, this study has explored differences in *access* to occupational positions. It is important to explore whether second-generation immigrants experience similar economic *returns* compared to native majority individuals, once they occupy similar occupational

positions. For example, there could be systematic differences in within-class allocation into occupational positions. With respect to the service class, a possible scenario could be that second-generation immigrants are clustered in less advantaged lower-level occupational positions within this class.

Five, the marriage patterns of the second-generation immigrants are important to our topic in at least two ways. Firstly, this study has focused on the occupational class attainment of men and women separately. However, a central position in the class analysis literature argues that one should focus on the dominant class position within a household, not the class position of each separate partner (e.g., Breen 2004*c*). For our purposes it would be interesting to explore what the dominant household class positions of non-employed second-generation immigrant women are. This is particularly important for Norwegian-Pakistani and Norwegian-Turkish women, who are markedly overrepresented among the non-employed. Secondly, it is important to explore patterns of intermarriage between second-generation immigrants of different national ancestries and individuals in the native majority in Norway. Patterns of intermarriage between ethnic minority and majority individuals are telling social indicators of social closure and ethnic boundary processes, but also reflect the potentially decreasing salience of ethnic background for future generations (Kalmijn 1998).

Six, the key to understanding the *overall* differences in labor-market outcomes and intergenerational social mobility between second-generation immigrant groups lies in the explanation of differences in educational attainment. There is still need for more research into why some second-generation immigrant groups attain different levels of educational qualifications than their social origin peers in the native majority.

8.4 Final conclusion: Unmaking the vertical mosaic?

Since the late 1960s Norway has experienced a substantial inflow of immigrants from developing countries in Asia, Africa, and Latin-America. Norwegian society has changed from ethnic homogeneity into a heterogeneous, multicultural society. Many immigrants arriving as labor migrants and refugees have become overrepresented in less advantaged positions within the social structure. Similar patterns of ethnic stratification have been described as a vertical mosaic, where the native majority population occupy positions in the top of the social hierarchy while visible minorities dominate the bottom rungs. In this context, the life-chances of children to immigrants have come to the fore as one of the most central policy concerns about the long-term consequences of immigration in Norway and

other Western European countries. This study has explored whether patterns of ethnic stratification experienced by immigrants are transferred to their children.

On the whole, this study has uncovered a general picture of optimism with regard to economic inclusion and structural assimilation of second-generation immigrants in Norway. Overall, second-generation immigrants seems to experience levels of upward intergenerational social mobility on par with – but also, in many cases, higher than – the native majority population. Some barriers still seem to exist at the entry into the labor force, and this must not be underplayed. Insofar that these gaps are caused by employment discrimination this is an important problem with regard to social justice. However, for the great majority of second-generation immigrants, those found in employment, the picture seems to be one of parity in access to occupational class positions, once equal educational attainment is secured.

This key finding has important implications for our understanding of economic inclusion among second-generation immigrants in Norway. The patterns documented give little support for the argument that a permanent immigrant 'underclass' is in the making, and being reproduced across generations. Following Rogstad (2006) and Thomson and Crul (2007), the results presented here gives strengthened support to the assertion that a focus on similarities and success in labor-market outcomes within the immigrant population is just as relevant as a one-sided focus on dissimilarity and marginalization. It is important to tell both sides of the story, and not only focus on patterns of disadvantage. Once employment is secured, the allocation of second-generation immigrant individuals to different occupational positions seems to be meritocratic compared to native majority individuals. The social class structure of the second-generation immigrant groups is internally stratified, and generally converging towards what we find in the native majority population. Overall, these results tell us that the second-generation immigrant groups in focus here in important respects experience structural assimilation compared to the native majority.

Ethnic groups are not static entities, but dynamic. The boundaries between groups may shift or disappear over time. In neo-assimilation theory, processes of assimilation are not uniform and do not only imply a unidirectional movement where the minority becomes more similar to the majority, but the processes are reciprocal: the ethnic majority and minorities assimilate and blend *together*. In an influential article, Alba (2005) discuss how the social distinction between the immigrant population and natives in all immigration societies is a complex one. These boundaries do not have the same character everywhere: some

ethnic boundaries remain bright, while others, over time, become blurry. Although the evidence presented here is not sufficient, this study does point to processes that could imply that the social boundaries between second-generation immigrants and their native majority peers are progressively becoming more blurred. Instead of reproducing ethnic stratification, the results presented here gives support to the proposition that patterns of social mobility within the second-generation immigrant population, unmaking the vertical mosaic of ethnic stratification, could be in the pipeline.

Since the majority of second-generation immigrants in Norway have not yet made the transition from education into the labor market, the key findings reported herein should be considered as preliminary with respect to the experience of later cohorts. However, this study provides a benchmark towards which future studies of labor-market outcomes and structural assimilation among second-generation immigrants in Norway should be compared. In conclusion, there is little cause for *major* distress with regard to the labor-market experience of second-generation immigrants in Norway today, although access to gainful employment still seems to be a bottleneck of ethnic disadvantage.

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Appendices

Appendix A: Binary logit models of service class attainment

Table A1: *Binary logit models of service class attainment for second-generation immigrants: Men (parameter estimates (contrasts with all other outcomes)).*

Model	1	2	3
National ancestry			
Native majority	*ref.*	*ref.*	*ref.*
India	0,490 **	0,718 ***	0,547 **
	(0.158)	(0.163)	(0.166)
Pakistan	-0,296 ***	0,151 (*)	0,282 **
	(0.080)	(0.082)	(0.085)
Turkey	-0,762 ***	-0,414 *	0,173 ns
	(0.178)	(0.181)	(0.184)
Vietnam	0,358 **	0,737 ***	1,022 ***
	(0.129)	(0.132)	(0.137)
Age/10 (cont 26-41, *ref. = 30 years*)	0,895 ***	0,938 ***	1,051 ***
	(0.050)	(0.052)	(0.53)
$(Age/10)^2$	-0,774 ***	-0,787 ***	-0,747 ***
	(0.057)	(0.059)	(0.60)
Parents' income			
Parents' income (cont 0.000-1.000, *ref.* = 0)		0,771 ***	0,859 ***
		(0.159)	(0.163)
(Parents' income)^2		1,020 ***	0,302 *
		(0.148)	(0.154)
Parents' educational qualifcations			
Tertiary qualifiactions, BA- or MA-level			1,424 ***
			(0.40)
Full secondary qualifications			0,670 ***
			(0.034)
Primary school qualifications			*ref.*
No educational qualifications registered			excl.
Intercept	-0,706 ***	-1,494 ***	-2,111 ***
	(0.015)	(0.039)	(0.047)
−2LL (*df*)	53,163.98 (6)	50,776.09 (8)	49,336.85 (10)
−2LL Change (Sig.)	-	2,387.89 ***	1,439.24 ***
Nagelkerke R^2	0,014	0,090	0,134
N	41 414	41 414	41 414

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students and/or with missing parental educational qualifications or family income are excluded.

Table A2: *Binary logit models of service class attainment for second-generation immigrants: Women (parameter estimates (contrasts with all other outcomes)).*

Model	1	2	3
National ancestry			
Native majority	*ref.*	*ref.*	*ref.*
India	0,521 **	0,666 ***	0,590 ***
	(0.152)	(0.155)	(0.161)
Pakistan	-0,979 ***	-0,568 ***	-0,443 ***
	(0.092)	(0.093)	(0.096)
Turkey	-1,072 ***	-0,725 ***	-0,249 ns
	(0.186)	(0.188)	(0.191)
Vietnam	-0,081 ns	0,240 (*)	0,488 ***
	(0.129)	(0.131)	(0.135)
Age/10 (cont 26-41, *ref. = 30 years*)	0,317 ***	0,350 ***	0,447 ***
	(0.050)	(0.051)	(0.052)
$(Age/10)^2$	-0,371 ***	-0,395 ***	-0,366 ***
	(0.058)	(0.059)	(0.060)
Parents' income			
Parents' income (cont 0.000-1.000, *ref.* = 0)		0,715 ***	0,711 ***
		(0.159)	(0.163)
$(Parents' income)^2$		0,795 ***	0,202 ns
		(0.150)	(0.155)
Parents' educational qualifcations			
Tertiary qualifiactions, BA- or MA-level			1,326 ***
			(0.040)
Full secondary qualifications			0,671 ***
			(0.034)
Primary school qualifications			*ref.*
No educational qualifications registered			excl.
Intercept	-0,476 ***	-1,139 ***	-1,710 ***
	(0.015)	(0.039)	(0.047)
−2LL (*df*)	49,824.83 (6)	48,212.98 (8)	47,052.66 (10)
−2LL Change (Sig.)	-	1,611.85 ***	1,160.32 ***
Nagelkerke R^2	0,009	0,065	0,105
N	37 785	37 785	37 785

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students and/or with missing parental educational qualifications or family income are excluded.

Appendix B: Multinomial logit models of occupational class attainment

Table B3: *Baseline multinomial logit models of occupational class destinations for second-generation immigrants: Men (parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII))).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Self employed (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0,802 **	0,925 **	0,024 ns	-0,720 (*)
	(0.244)	(0.284)	(0.546)	(0.382)
Pakistan	-0,612 ***	0,082 ns	0,616 ***	-1,640 ***
	(0.089)	(0.100)	(0.127)	(0.149)
Turkey	-1,084 ***	0,123 ns	-0,056 ns	-0,537 **
	(0.198)	(0.191)	(0.315)	(0.194)
Vietnam	0,828 ***	0,944 ***	0,929 **	-0,091 ns
	(0.194)	(0.221)	(0.327)	(0.249)
Age/10	0,829 ***	0,047 ns	1,238 ***	-0,119 (*)
	(0.065)	(0.083)	(0.135)	(0.072)
$(Age/10)^2$	-0,666 ***	-0,197 (*)	-0,471 **	0,104 ns
	(0.076)	(0.101)	(0.142)	(0.086)
Family status	0,076 *	-0,118 **	0,129 *	0,137 ***
	(0.034)	(0.046)	(0.61)	(0.039)
Number of children	0,242 ***	0,090 **	0,117 **	0,082 **
	(0.024)	(0.033)	(0.041)	(0.028)
Intercept	0,307 ***	-0,576 ***	-1,944 ***	-0,206 ***
	(0.024)	(0.031)	(0.049)	(0.028)
Chi-square (df)	1,303.51 (32)			
Nagelkerke R^2	0,037			
N	36 877			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications excluded.

Table B4: *Multinomial logit models of occupational class destinations for second-generation immigrants: Men (parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII))).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Self employed (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0,766 **	0,936 **	-0,026 ns	-0,622 ns
	(0.277)	(0.286)	(0.547)	(0.387)
Pakistan	-0,027 ns	0,211 *	0,636 ***	-1,379 ***
	(0.103)	(0.101)	(0.128)	(0.151)
Turkey	-0,290 ns	0,267 ns	0,026 ns	-0,232 ns
	(0.222)	(0.192)	(0.316)	(0.199)
Vietnam	0,672 **	0,942 ***	0,896 **	-0,048 ns
	(0.223)	(0.223)	(0.329)	(0.252)
Age/10	0,687 ***	0,025 ns	1,166 ***	-0,072 ns
	(0.076)	(0.082)	(0.133)	(0.072)
$(Age/10)^2$	-0,251 **	-0,113 ns	-0,348 *	0,156 (*)
	(0.088)	(0.101)	(0.141)	(0.087)
Family status	0,100 *	-0,116 *	0,134 *	0,113 **
	(0.040)	(0.046)	(0.061)	(0.040)
Number of children	0,131 ***	0,064 (*)	0,116 **	0,059 *
	(0.027)	(0.033)	(0.041)	(0.028)
Educational qualifications				
Higher tertiary	4,066 ***	1,095 ***	2,139 ***	-0,934 ***
	(0.138)	(0.176)	(0.170)	(0.230)
Lower tertiary	2,407 ***	1,051 ***	0,461 ***	-1,129 ***
	(0.050)	(0.062)	(0.091)	(0.080)
Higher secondary	*ref.*	*ref.*	*ref.*	*ref.*
Lower secondary	-1,069 ***	-0,130 **	-0,208 **	-1,150 ***
	(0.044)	(0.044)	(0.060)	(0.041)
Primary	-1,001 ***	-0,211 **	0,211 **	-1,254 ***
	(0.071)	(0.070)	(0.081)	(0.070)
Intercept	-0,324 ***	-0,665 ***	-2,010 ***	0,200 ***
	(0.033)	(0.037)	(0.056)	(0.031)
Chi-square (df)	16,533.10 (48)			
Nagelkerke R^2	0,383			
N	36 877			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications excluded.

Table B5: *Multinomial logit models of occupational class destinations for second-generation immigrants: Men (parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII))).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Self employed (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0,857 **	0,939 **	-0,004 ns	-0,591 ns
	(0.277)	(0.287)	(0.548)	(0.387)
Pakistan	0,369 **	0,352 **	0,765 ***	-1,315 ***
	(0.110)	(0.110)	(0.137)	(0.159)
Turkey	0,188 ns	0,346 (*)	0,305 ns	-0,192 ns
	(0.226)	(0.204)	(0.321)	(0.205)
Vietnam	1,095 ***	1,136 ***	1,118 **	0,012 ns
	(0.232)	(0.232)	(0.336)	(0.263)
Age/10	0,784 ***	0,058 ns	1,215 ***	-0,079 ns
	(0.077)	(0.083)	(0.135)	(0.073)
$(Age/10)^2$	-0,268 **	-0,113 ns	-0,333 *	0,167 (*)
	(0.090)	(0.102)	(0.142)	(0.088)
Family status	0,107 **	-0,110 *	0,162 **	0,108 **
	(0.040)	(0.046)	(0.061)	(0.040)
Number of children	0,132 ***	0,068 *	0,115 **	0,061 *
	(0.028)	(0.033)	(0.041)	(0.028)
Educational qualifications				
Higher tertiary	3,773 ***	0,959 ***	1,960 ***	-0,881 ***
	(0.139)	(0.177)	(0.172)	(0.231)
Lower tertiary	2,262 ***	0,984 ***	0,378 ***	-1,123 ***
	(0.051)	(0.063)	(0.092)	(0.081)
Higher secondary	*ref.*	*ref.*	*ref.*	*ref.*
Lower secondary	-0,977 ***	-0,088 *	-0,170 **	-1,149 ***
	(0.045)	(0.045)	(0.061)	(0.041)
Primary	-0,879 ***	-0,164 *	0,271 **	-1,285 ***
	(0.072)	(0.072)	(0.083)	(0.071)
Parents' income				
Parents' income	0,276 ns	0,079 ns	-2,004 ***	0,865 ***
	(0.240)	(0.271)	(0.346)	(0.242)
$(Parents' income)^2$	0,689 **	0,381 ns	2,050 ***	-0,842 **
	(0.236)	(0.272)	(0.350)	(0.247)
Parents' educational qualifications				
Teritary qualifications (BA,MA,+)	0,682 ***	0,294 ***	0,604 ***	-0,104 (*)
	(0.060)	(0.068)	(0.091)	(0.062)
Full secondary qualifications	0,408 ***	0,155 **	0,325 ***	0,041 ns
	(0.045)	(0.049)	(0.065)	(0.041)
Primary school qualifications	*ref.*	*ref.*	*ref.*	*ref.*
No educ. qual. registered	0,196 ns	0,191 ns	-0,141 ns	0,126 ns
	(0.150)	(0.149)	(0.207)	(0.147)
Intercept	-1,107 ***	-0,981 ***	-2,030 ***	0,026 ns
	(0.069)	(0.075)	(0.099)	(0.064)
Chi-square (df)	17,295.81 (68) ***			
Nagelkerke R^2	0,399			
N	36 638			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications or family income excluded.

Table B6: *Baseline multinomial logit models of occupational class destinations for second-generation immigrants: Women (parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII))).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Self employed (IV)	Skilled manual work and supervisors (V+VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0,891 ***	0,390 ns	1,221 *	-0,609 ns
	(0.248)	(0.283)	(0.553)	(0.621)
Pakistan	-0,752 ***	-0,081 ns	0,844 ***	-1,780 ***
	(0.110)	(0.107)	(0.239)	(0.344)
Turkey	-1,179 ***	-0,482 *	-1,220 ns	-0,388 ns
	(0.211)	(0.201)	(1.011)	(0.319)
Vietnam	0,219 ns	0,324 (*)	1,120 *	0,082 ns
	(0.184)	(0.196)	(0.445)	(0.311)
Age/10	0,245 ***	-0,008 ns	1,334 ***	-0,635 ***
	(0.068)	(0.075)	(0.254)	(0.118)
$(Age/10)^2$	-0,329 ***	-0,202 *	-0,638 *	0,222 ns
	(0.080)	(0.089)	(0.257)	(0.147)
Family status	-0,044 ns	0,032 ns	0,308 **	-0,037 ns
	(0.034)	(0.038)	(0.106)	(0.065)
Number of children	0,211 ***	0,008 ns	0,104 ns	0,135 **
	(0.023)	(0.026)	(0.065)	(0.043)
Intercept	0,613 ***	0,141 ***	-3,193 ***	-1,342 ***
	(0.028)	(0.031)	(0.101)	(0.051)
Chi-square (df)	544.61 (32)			
Nagelkerke R^2	0,018			
N	31 973			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications excluded.

Table B7: *Multinomial logit models of occupational class destinations for second-generation immigrants: Women (parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII))).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Self employed (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0,739 *	0,419 ns	1,102 *	-0,622 ns
	(0.297)	(0.287)	(0.560)	(0.624)
Pakistan	0,103 ns	0,159 ns	1,113 ***	-1,641 ***
	(0.135)	(0.109)	(0.242)	(0.346)
Turkey	-0,165 ns	-0,191 ns	-0,871 ns	-0,085 ns
	(0.263)	(0.204)	(1.013)	(0.326)
Vietnam	0,089 ns	0,342 (*)	0,996 *	0,070 ns
	(0.225)	(0.200)	(0.451)	(0.315)
Age/10	0,507 ***	0,122 ns	1,455 ***	-0,408 **
	(0.084)	(0.076)	(0.254)	(0.118)
$(Age/10)^2$	0,001 ns	-0,162 (*)	-0,508 *	0,104 ns
	(0.098)	(0.089)	(0.257)	(0.148)
Family status	0,007 ns	0,031 ns	0,320 **	-0,047 ns
	(0.042)	(0.038)	(0.106)	(0.065)
Number of children	0,055 (*)	-0,040 ns	0,070 ns	0,064 ns
	(0.028)	(0.027)	(0.065)	(0.044)
Educational qualifications				
Higher tertiary, MA level	4,346 ***	0,966 ***	2,926 ***	-0,193 ns
	(0.153)	(0.175)	(0.209)	(0.308)
Lower tertiary, BA level	2,993 ***	1,075 ***	0,991 ***	-0,657 ***
	(0.049)	(0.051)	(0.118)	(0.102)
Higher secondary	*ref.*	*ref.*	*ref.*	*ref.*
Lower secondary	-1,245 ***	-0,436 ***	-0,605 ***	-1,321 ***
	(0.054)	(0.039)	(0.114)	(0.075)
Primary	-1,431 ***	-0,439 ***	-0,415 *	-1,448 ***
	(0.109)	(0.068)	(0.189)	(0.153)
Intercept	-0,600 ***	0,069 (*)	-3,351 ***	-0,881 ***
	(0.041)	(0.037)	(0.114)	(0.056)
Chi-square (df)	15,369.32 (48)			
Nagelkerke R^2	0,414			
N	31 973			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications excluded.

Table B8: *Multinomial logit models of occupational class destinations for second-generation immigrants: Women (parameter estimates (contrasts with less skilled non-manual and manual work (IIIb and VII))).*

	Service class (I and II)	Routine non-manual workers, higher level (IIIa)	Self employed (IV)	Skilled manual work and supervisors (V and VI)
National ancestry				
Native majority	*ref.*	*ref.*	*ref.*	*ref.*
India	0,965 **	0,566 (*)	1,220 *	-0,538 ns
	(0.304)	(0.293)	(0.565)	(0.628)
Pakistan	0,451 **	0,328 **	1,283 ***	-1,687 ***
	(0.141)	(0.116)	(0.257)	(0.368)
Turkey	0,253 ns	0,001 ns	-0,595 ns	-0,076 ns
	(0.266)	(0.212)	(1.018)	(0.331)
Vietnam	0,405 (*)	0,468 *	1,218 **	0,035 ns
	(0.227)	(0.204)	(0.456)	(0.317)
Age/10	0,562 ***	0,159 *	1,471 ***	-0,423 ***
	(0.085)	(0.076)	(0.254)	(0.118)
$(Age/10)^2$	-0,032 ns	-0,186 *	-0,498 (*)	0,099 ns
	(0.099)	(0.090)	(0.258)	(0.148)
Family status	0,003 ns	0,029 ns	0,317 **	-0,048 ns
	(0.043)	(0.039)	(0.106)	(0.065)
Number of children	0,051 (*)	-0,042 ns	0,061 ns	0,063 ns
	(0.028)	(0.027)	(0.066)	(0.044)
Educational qualifications				
Higher tertiary	4,094 ***	0,824 ***	2,675 ***	-0,134 ns
	(0.155)	(0.177)	(0.215)	(0.310)
Lower tertiary	2,907 ***	1,022 ***	0,898 ***	-0,630 ***
	(0.050)	(0.052)	(0.120)	(0.103)
Higher secondary	*ref.*	*ref.*	*ref.*	*ref.*
Lower secondary	-1,151 ***	-0,383 ***	-0,538 ***	-1,326 ***
	(0.054)	(0.040)	(0.116)	(0.075)
Primary	-1,312 ***	-0,376 ***	-0,313 (*)	-1,445 ***
	(0.110)	(0.070)	(0.190)	(0.153)
Parents' income				
Parents' income	0,387 ns	0,324 ns	-0,046 ns	0,071 ns
	(0.262)	(0.238)	(0.613)	(0.397)
$(Parents' income)^2$	0,551 *	0,210 ns	0,529 ns	0,109 ns
	(0.260)	(0.242)	(0.601)	(0.408)
Parents' educational qualifications				
Teritary qualifications (BA, MA,+)	0,401 ***	0,256 ***	0,584 ***	-0,266 *
	(0.068)	(0.063)	(0.158)	(0.109)
Full secondary qualifications	0,332 ***	0,223 ***	0,329 **	-0,055 ns
	(0.050)	(0.042)	(0.120)	(0.068)
Primary school qualifications	*ref.*	*ref.*	*ref.*	*ref.*
No educ. qual. registered	0,069 ns	0,204 ns	0,268 ns	-0,149 ns
	(0.178)	(0.146)	(0.373)	(0.269)
Intercept	-1,242 ***	-0,329 ***	-3,790 ***	-0,864 ***
	(0.076)	(0.066)	(0.190)	(0.105)
Chi-square (df)	15,620.93 (68) ***			
Nagelkerke R^2	0,421			
N	31 807			

ns $p > 0.10$, (*) $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, two-tailed tests. Standard errors are given in brackets. *ref.*: reference category. Note: Respondents registered as students, economically non-active, or 'other' on the dependent variable are excluded. Respondents with missing educational qualifications or family income excluded.